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VOL. XI

No. 1

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SUMNER P. HUNT AND A. WESLEY EAGER

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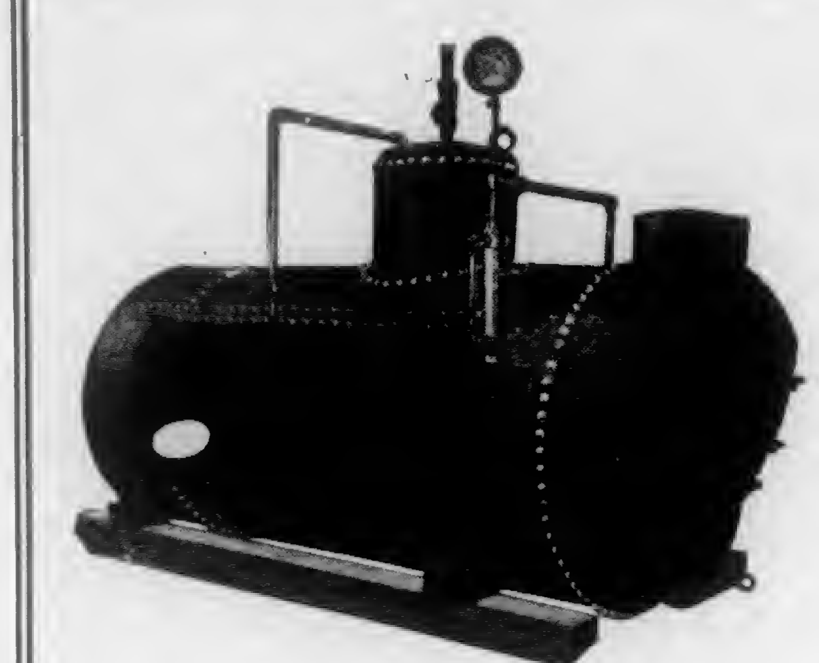
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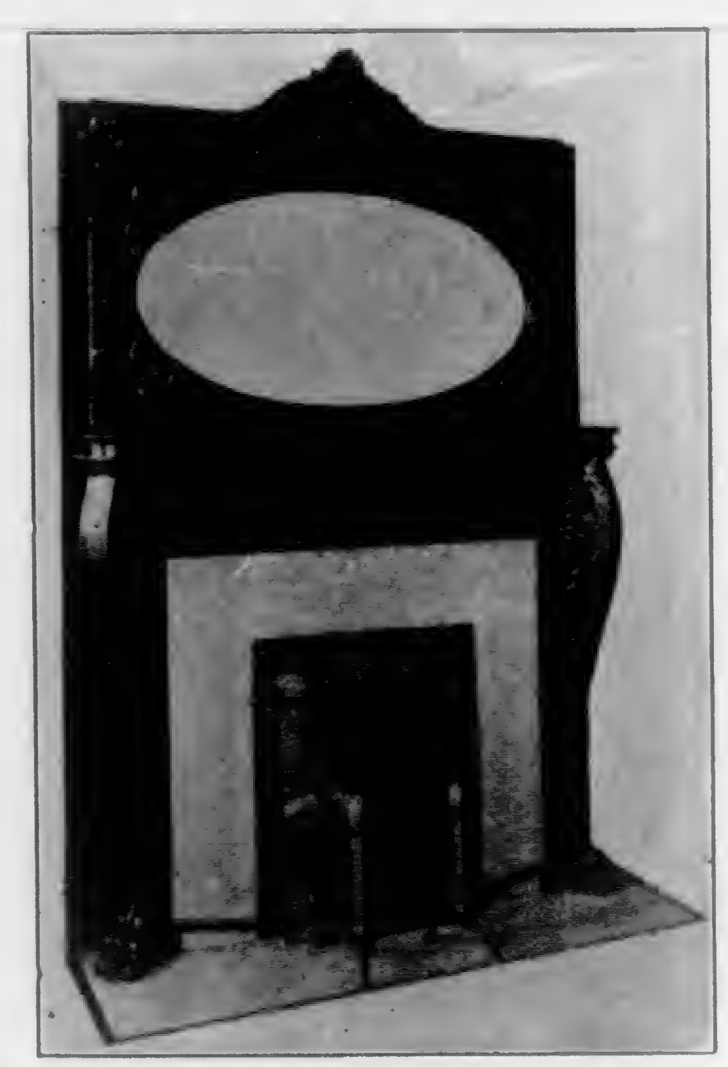
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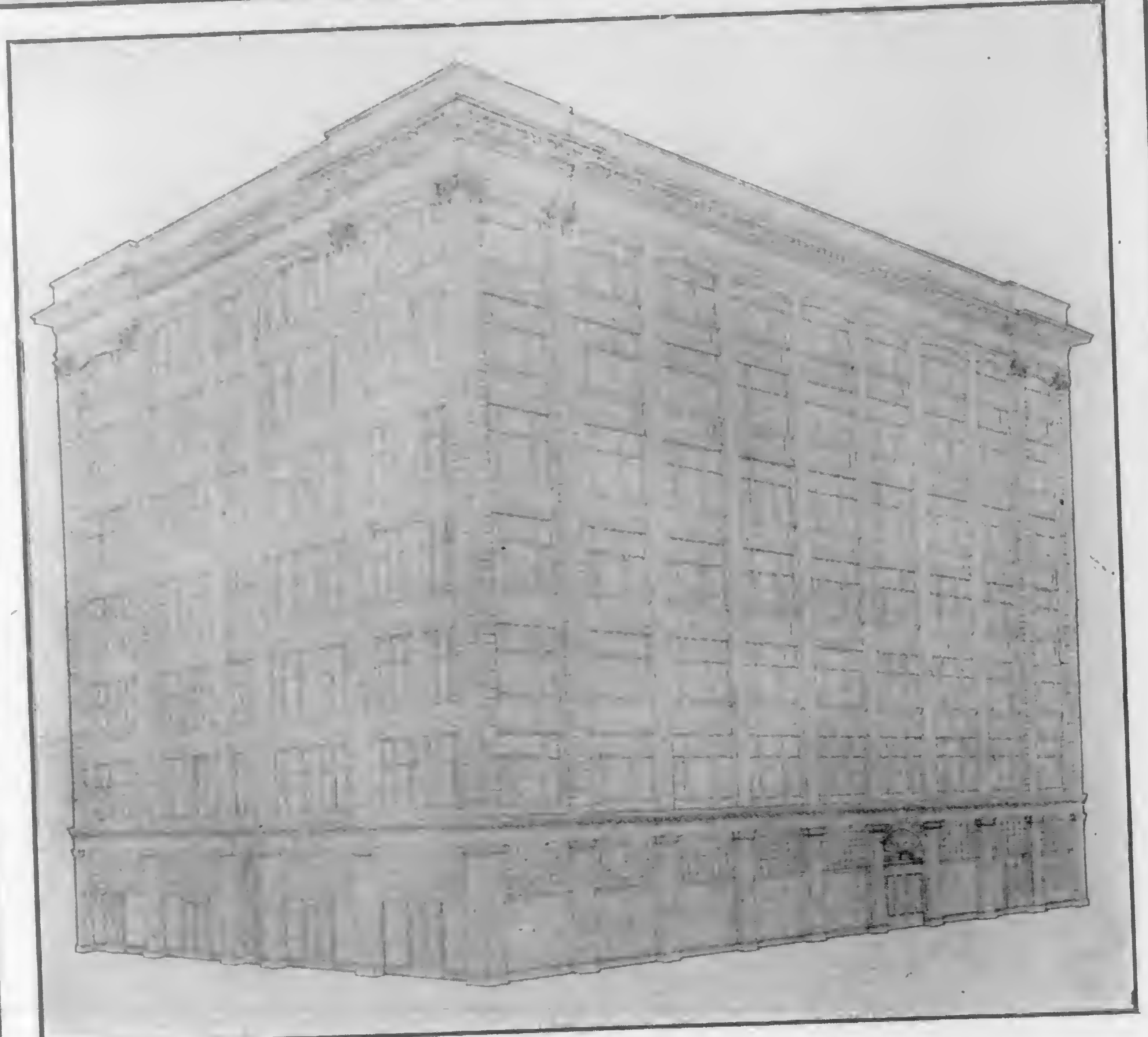
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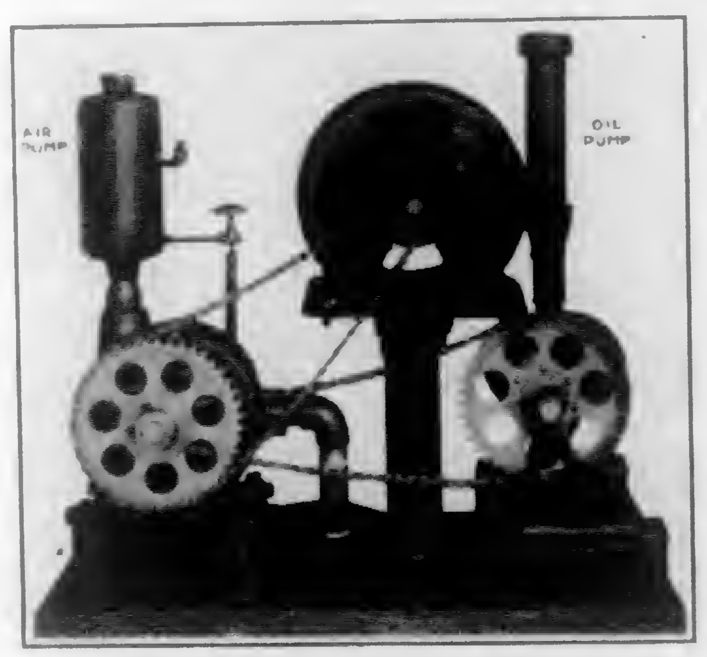
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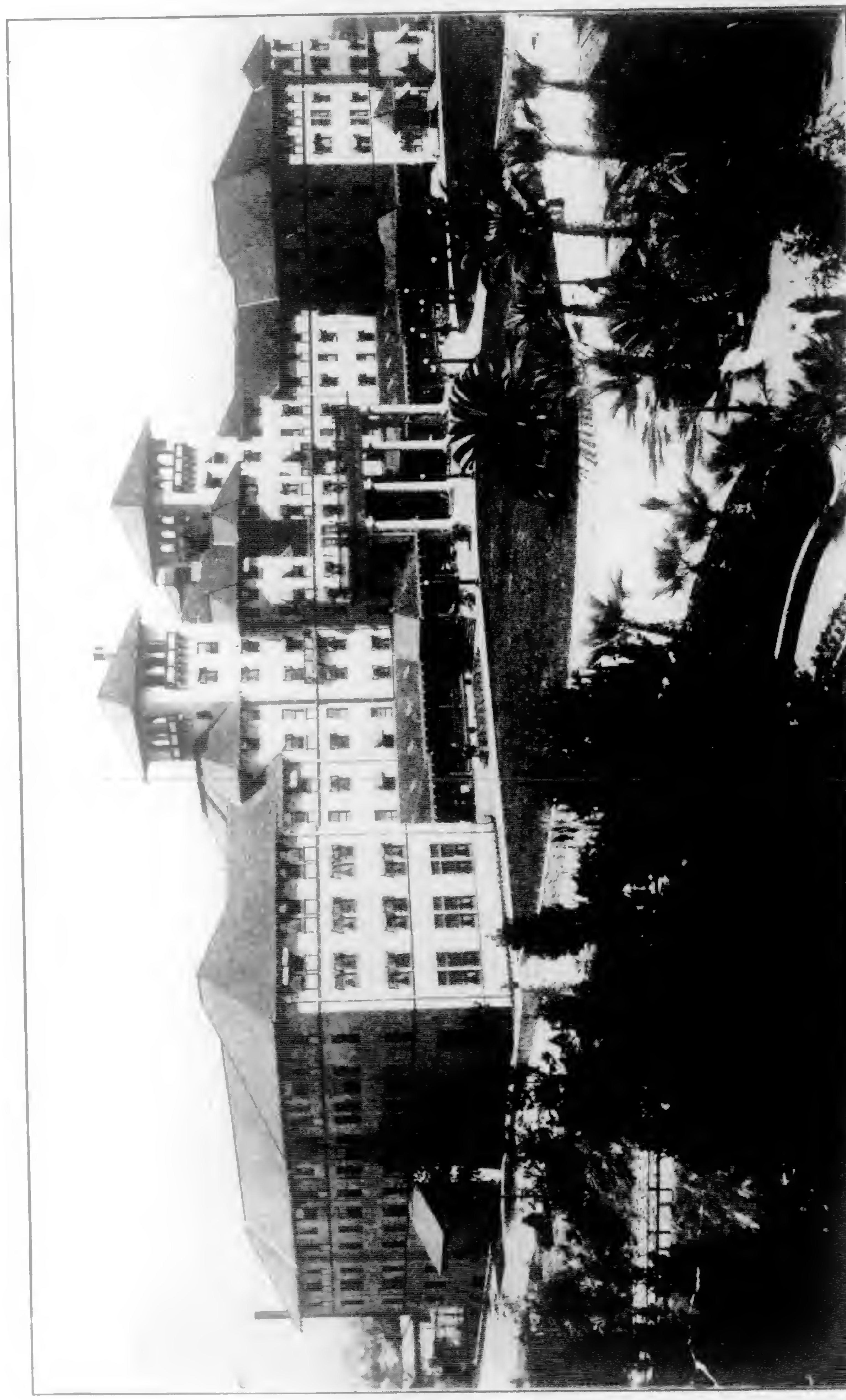
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Contents for November



Frontispiece. The Architect and Engineer of California, November, 1907

The Raymond Hotel, Pasadena, Cal.
Hunt and Eager, Architects

Equipped with Otis Elevators

THE

Architect and Engineer

Of California

VOL. XI. NOVEMBER, 1907. No. 1.

Some of the Work of Sumner P. Hunt and A. Wesley Eager, Architects



FROM the reign of the jig-saw and turning lathe, it is a far cry to the present clean cut, straightforward, domestic architecture of Southern California.

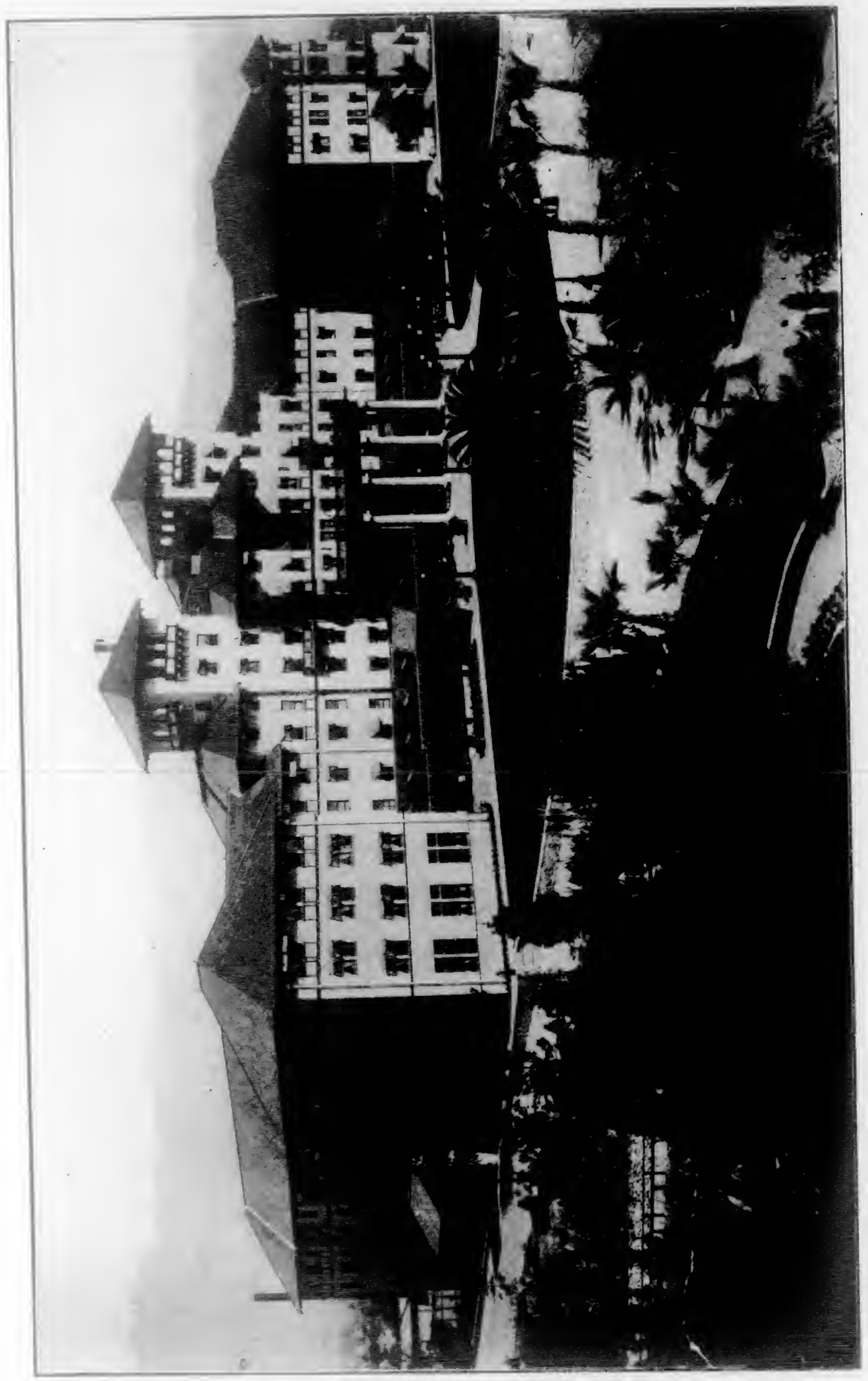
Very complete has been the transition of the last decade, and today no one thing more strongly impresses the observer than the character of California homes and their surroundings, their fitness and air of belonging to the locality. Not only is this evident in the more costly and elaborate homes, but in the modest cottage, the rambling bungalow—charming in their simplicity—yet in every way homelike.

Messrs. Hunt and Eager, having been schooled in the East, early recognized the futility of attempting to transplant Eastern architecture to the climate of Southern California, and at once set about to evolve a harmonious and consistent treatment for local domestic work.

In many cases, the late domestic English fits surprisingly well; in certain locations the French Chateau style seems quite at home; while among the hills and cañons a Swiss treatment suggests itself, and in the lowlands the Mission type.

These gentlemen have carefully studied the various types, always inspired by the location and surroundings, with a result peculiarly distinctive and characteristic.

The long roof lines, the broad overhang, inviting entrances, spacious verandas and pergolas everywhere to be seen in their work, show how the ways and likes of their clients have been considered, and with the studied lines of the landscape work, each problem presents as a whole a harmonious blend. While in some cases the work may not have the true ring of the style adopted, this is due to the modification of the motif to meet the local requirements, but we believe in general the results have been successful—just how entirely so may be left to the judgment of the reader, who will find in the following pages some striking photographs of Hunt and Eager's residence work.



The Raymond Hotel, Pasadena, Cal.
Hunt and Eager, Architects

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Frontispiece, The Architect and Engineer of California, November, 1907

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Residence of Mr. J. Ross Clark, Los Angeles
Hunt and Eager, Architects



Dining Room, Residence of Mr. J. Ross Clark, Los Angeles
Hunt and Eager, Architects



Residence of Mr. Frank K. Wilson, Los Angeles
Hunt and Eager, Architects



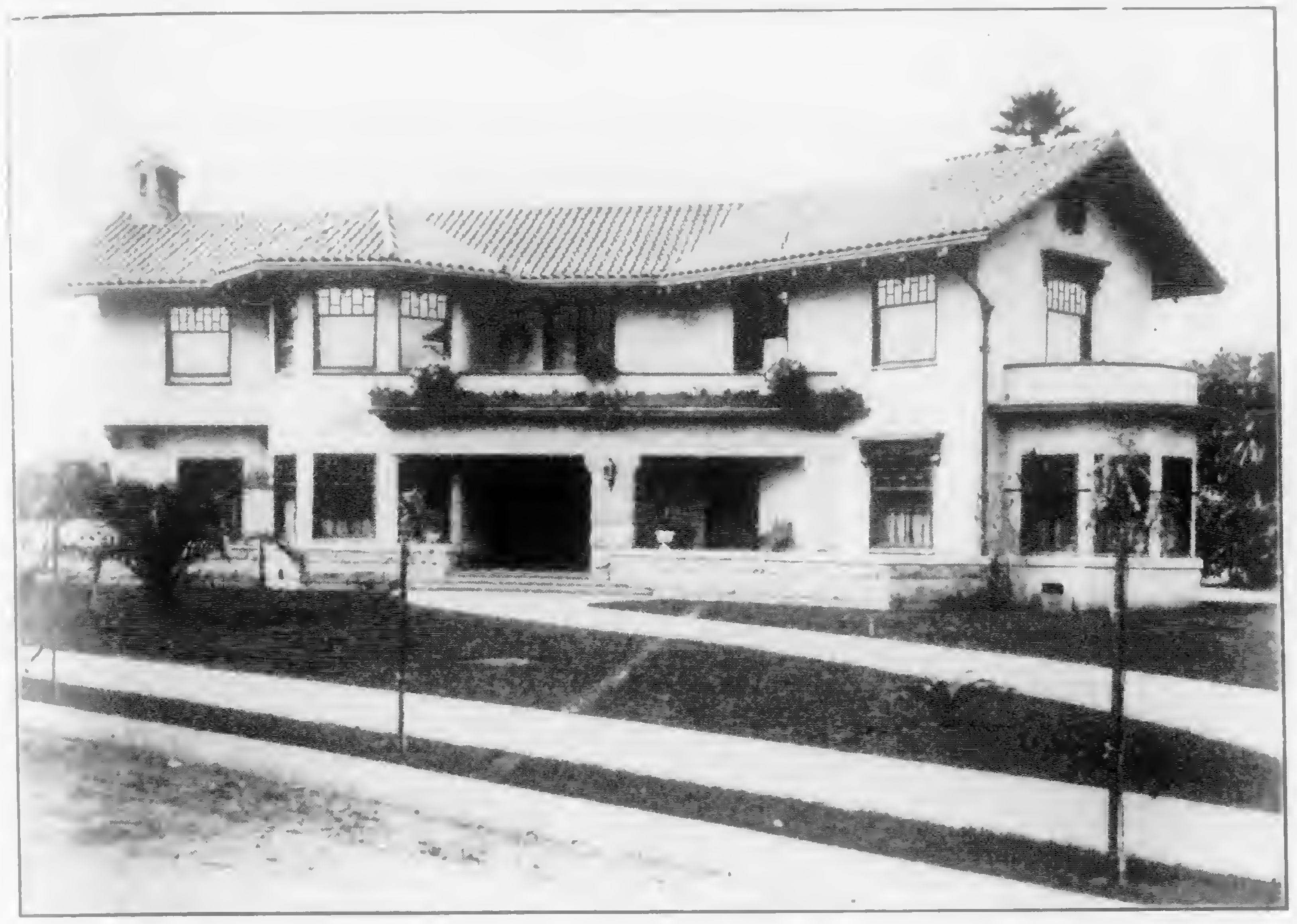
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Hunt and Eager, Architects



Residence of Mr. J. Ross Clark, Los Angeles
Hunt and Eager, Architects



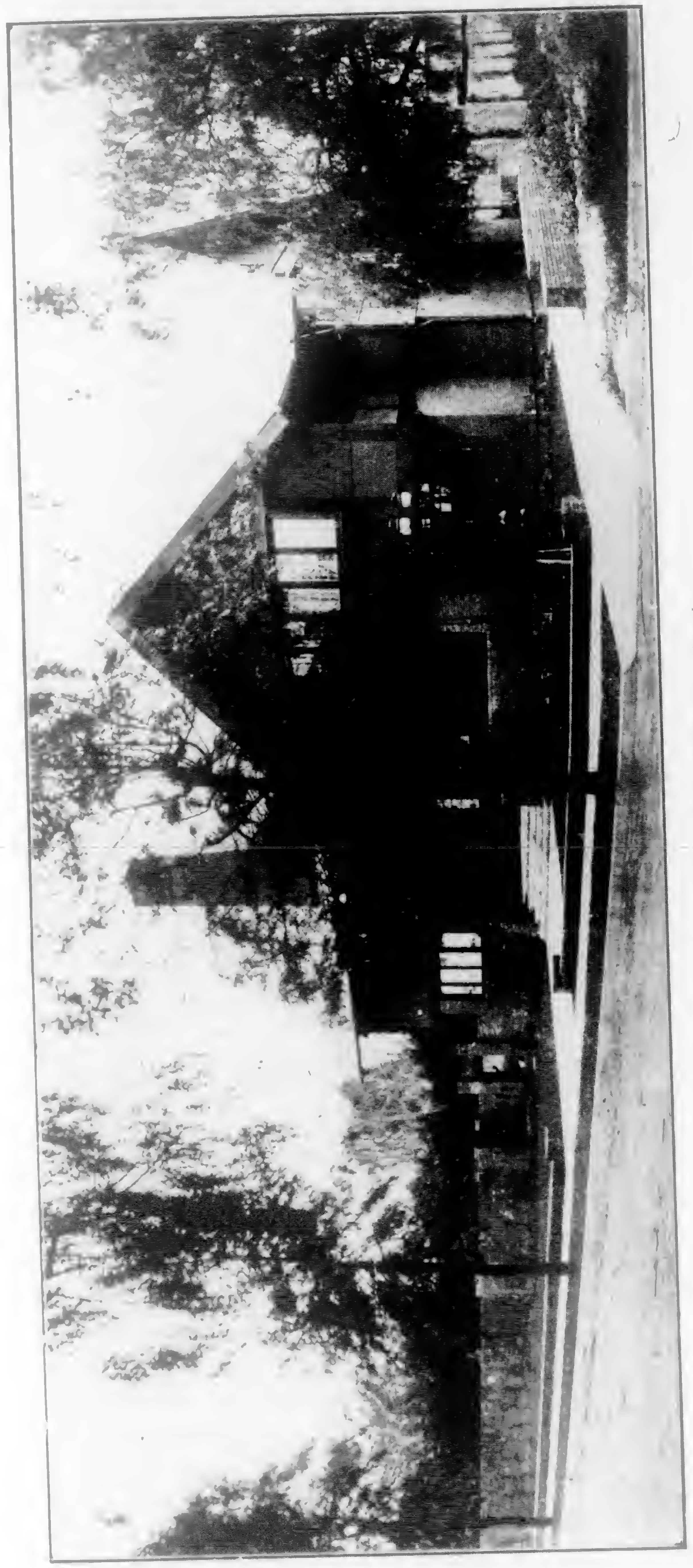
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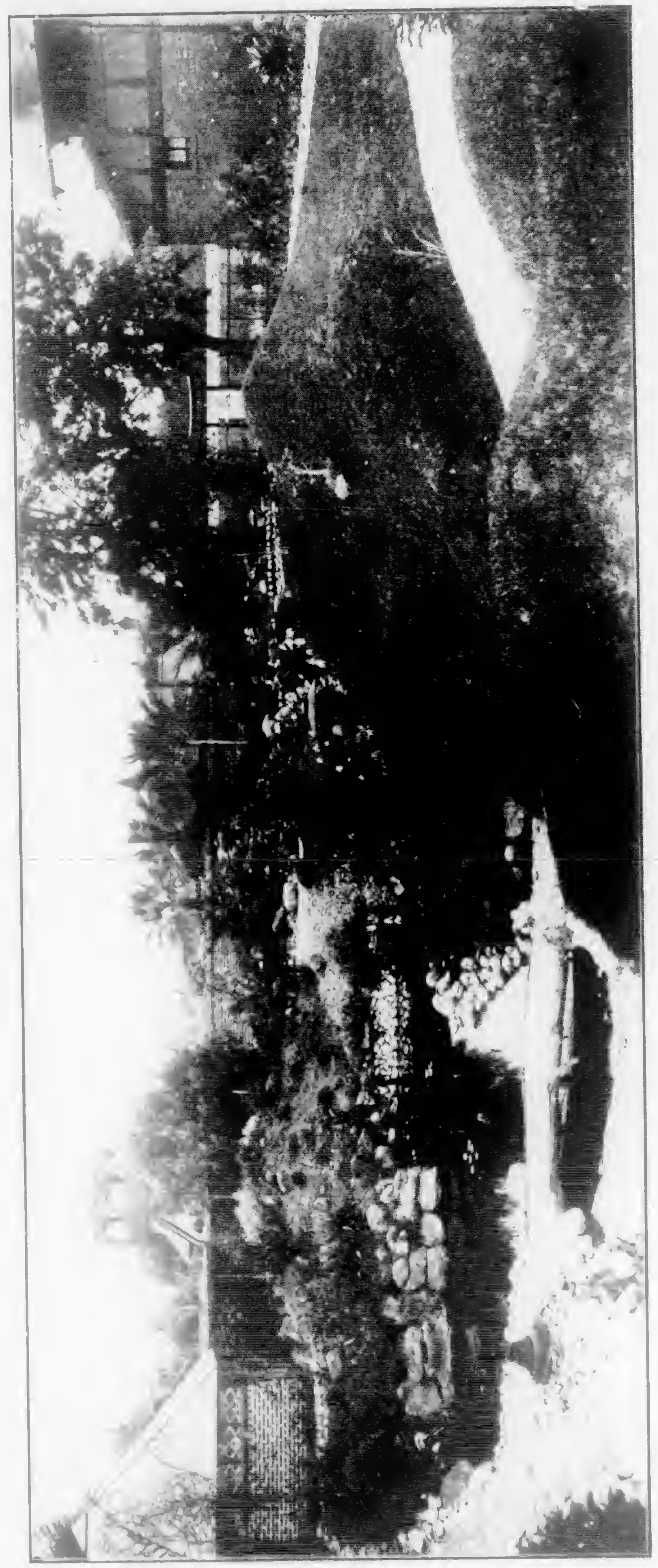
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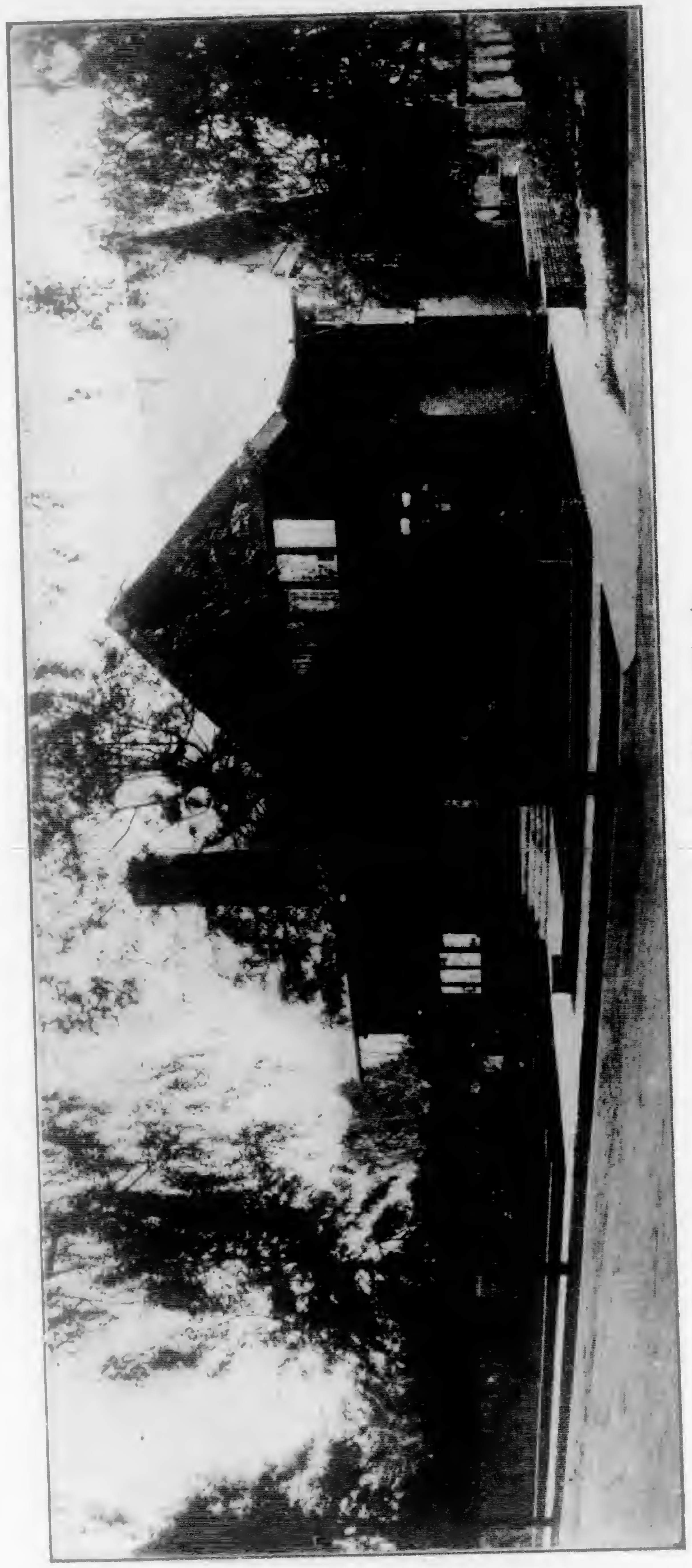
Living Room, Residence of Mr. Frank K. Wilson, Los Angeles
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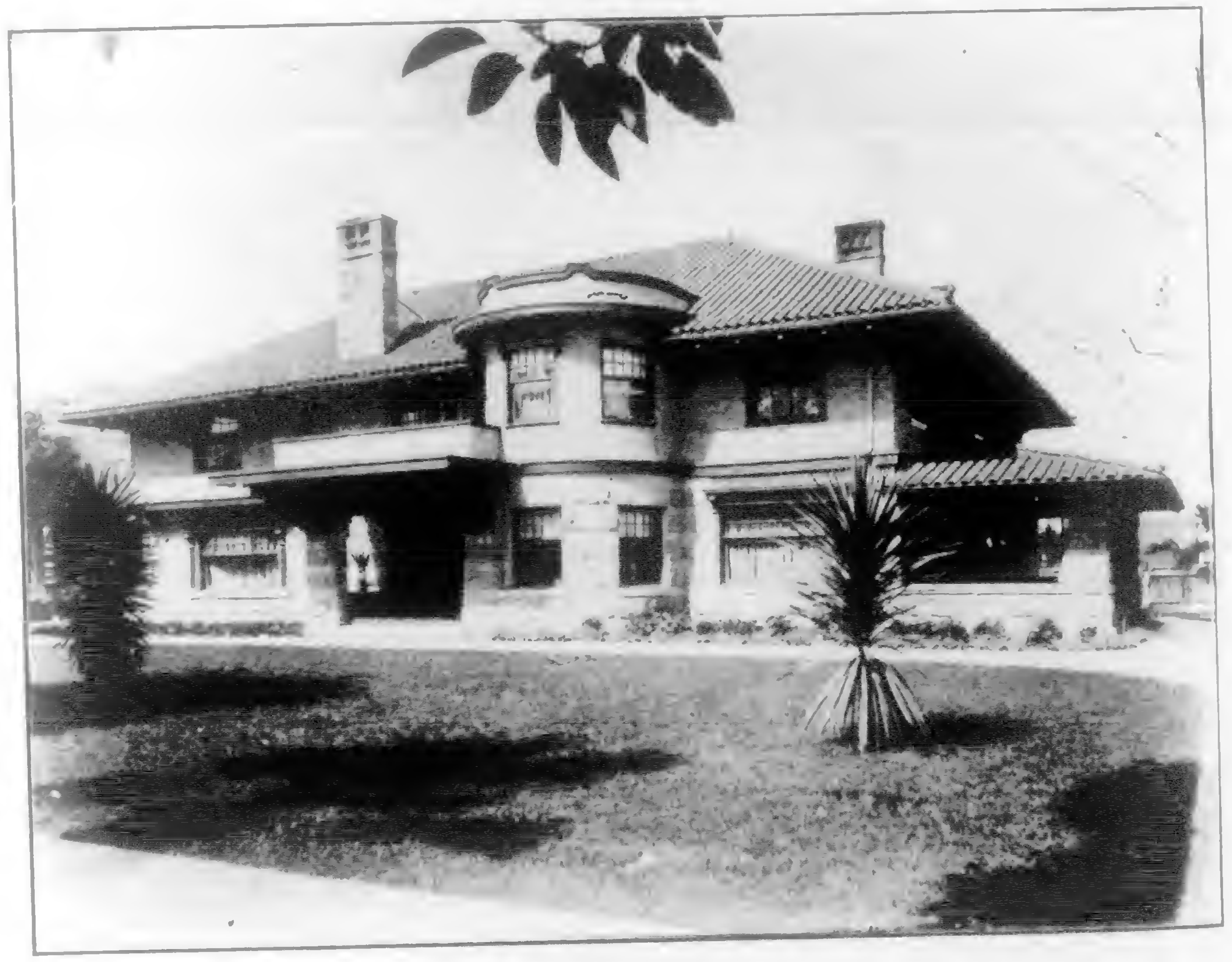
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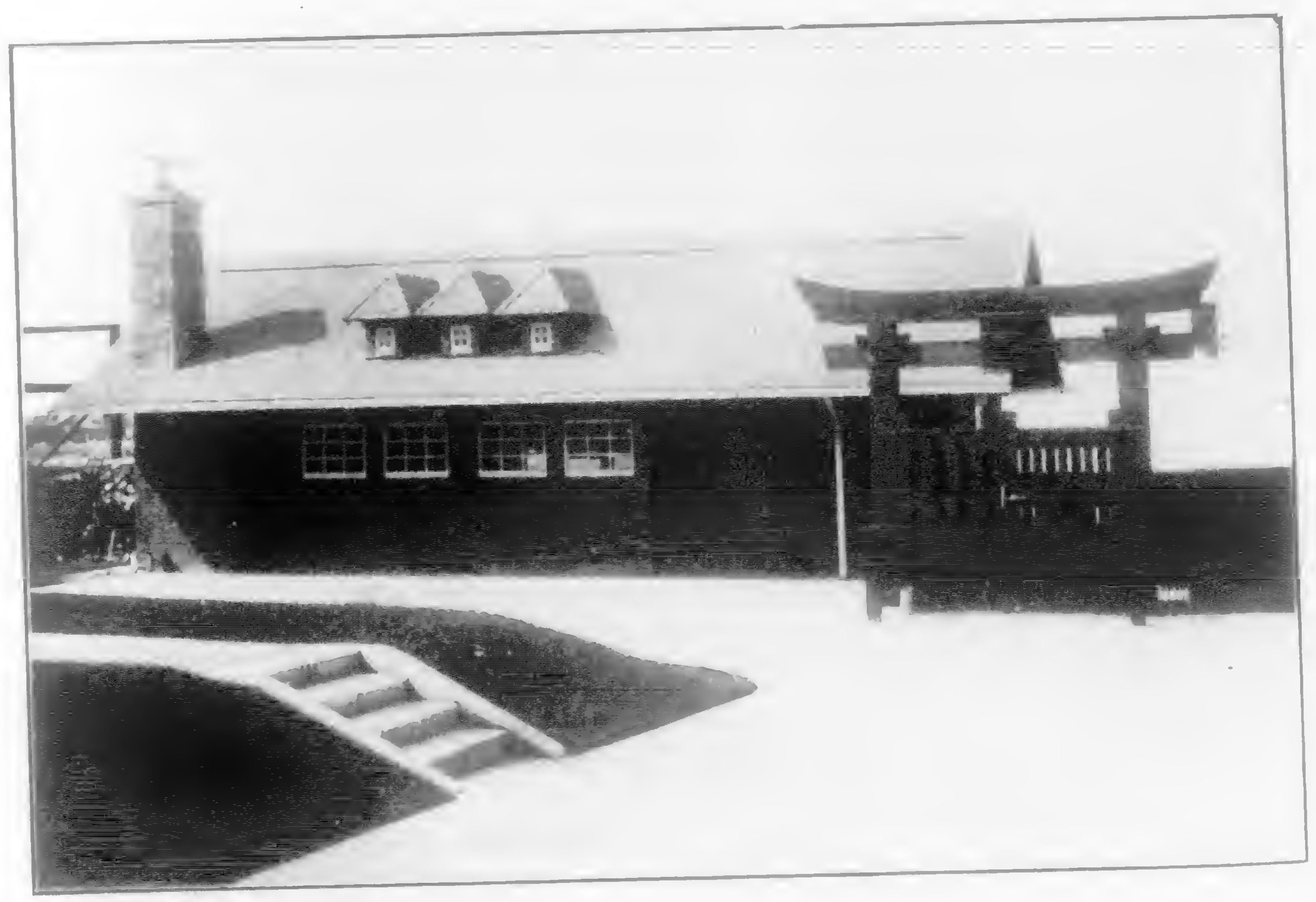
Residence of Mr. C. F. Perry, Los Angeles
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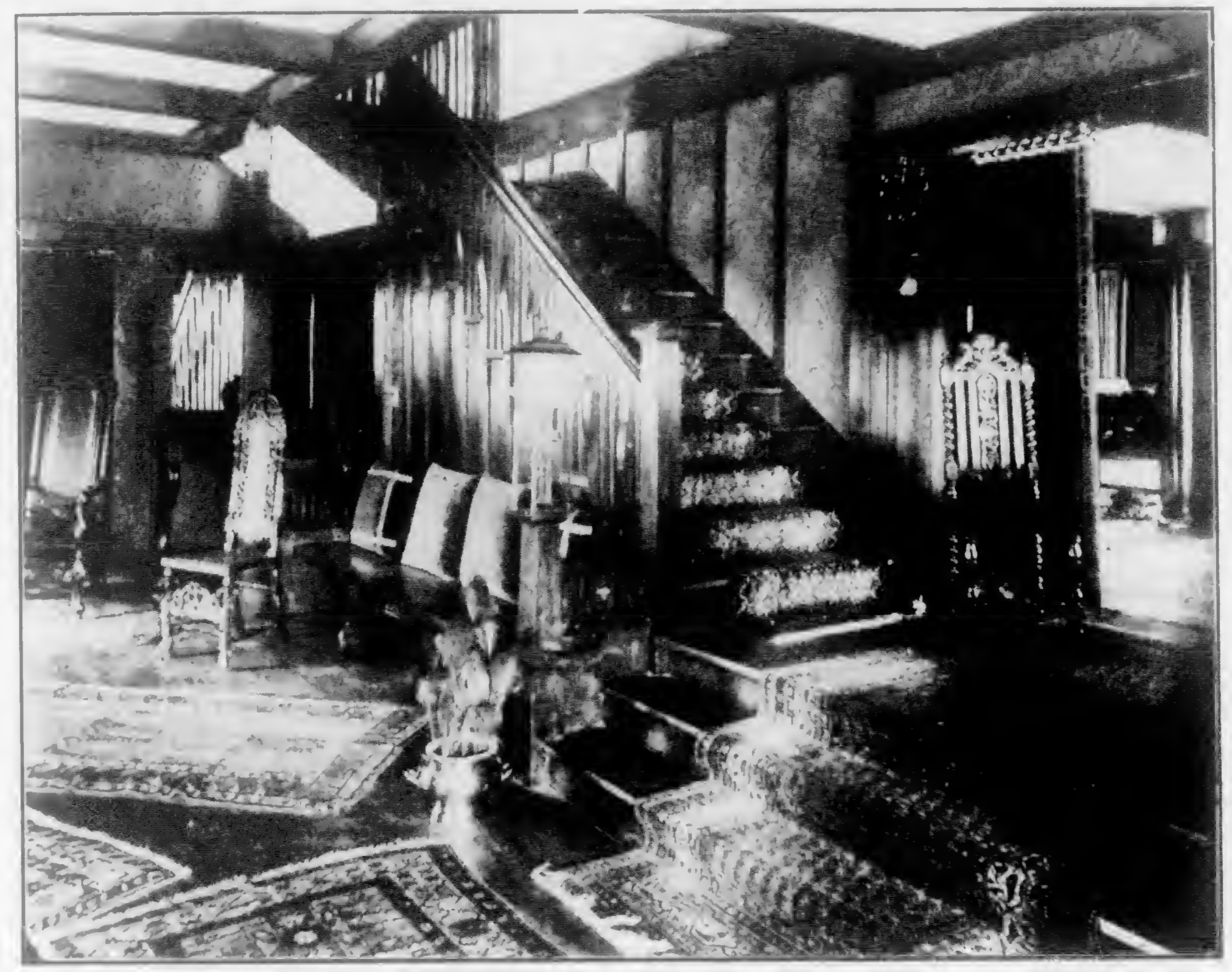
Residence of Mr. H. Beville, Hollywood
Hunt and Eager, Architects



Residence of Mr. Geo. W. Dickinson, Los Angeles
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Garage of Mr. Geo. W. Dickinson, Los Angeles



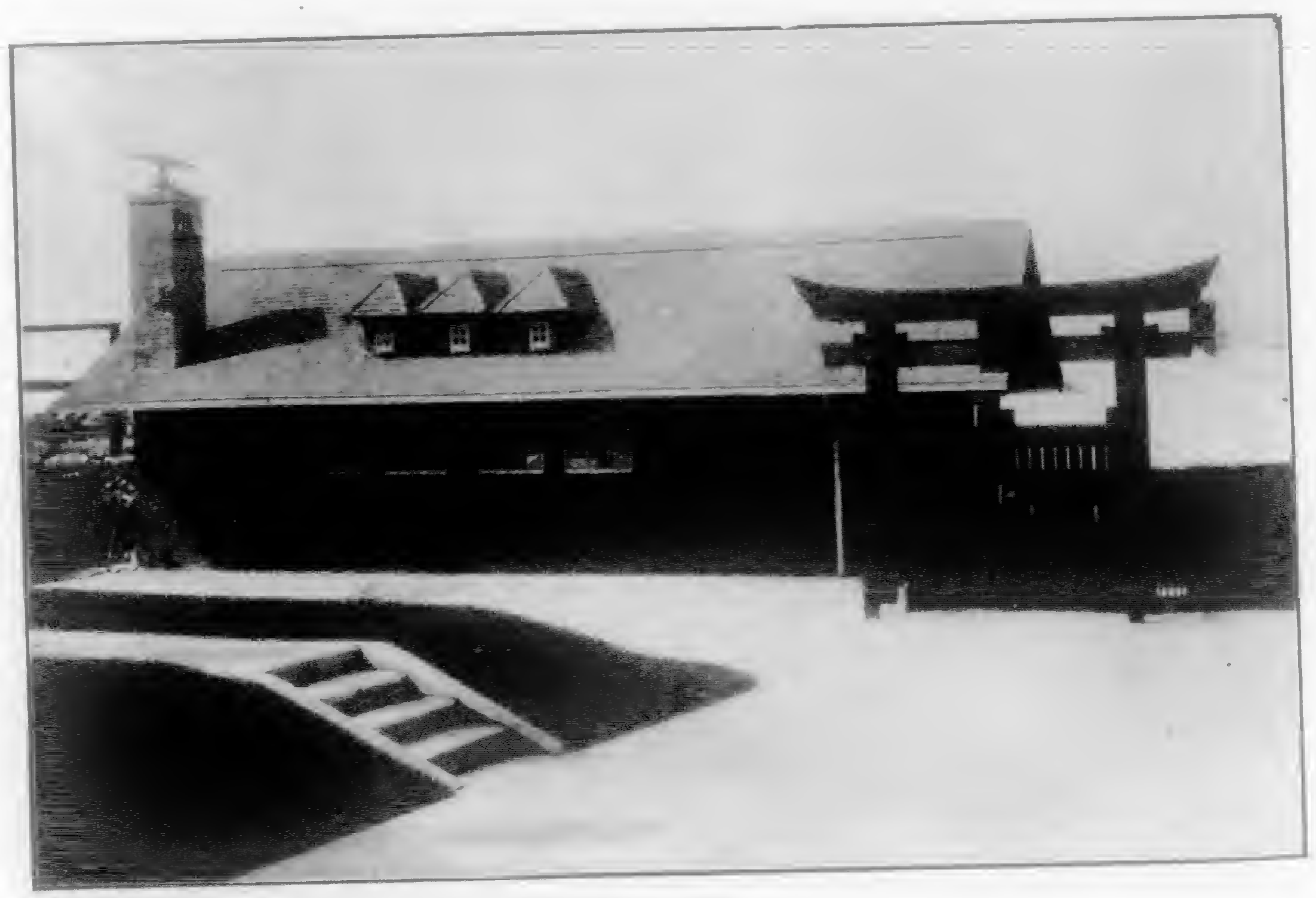
Stair Hall in Residence of Mr. Geo. W. Dickinson



Ebell Club Building, Los Angeles
Hunt and Eager, Architects



Residence of Mr. Geo. W. Dickinson, Los Angeles
Hunt and Eager, Architects



Garage of Mr. Geo. W. Dickinson, Los Angeles



Stair Hall in Residence of Mr. Geo. W. Dickinson



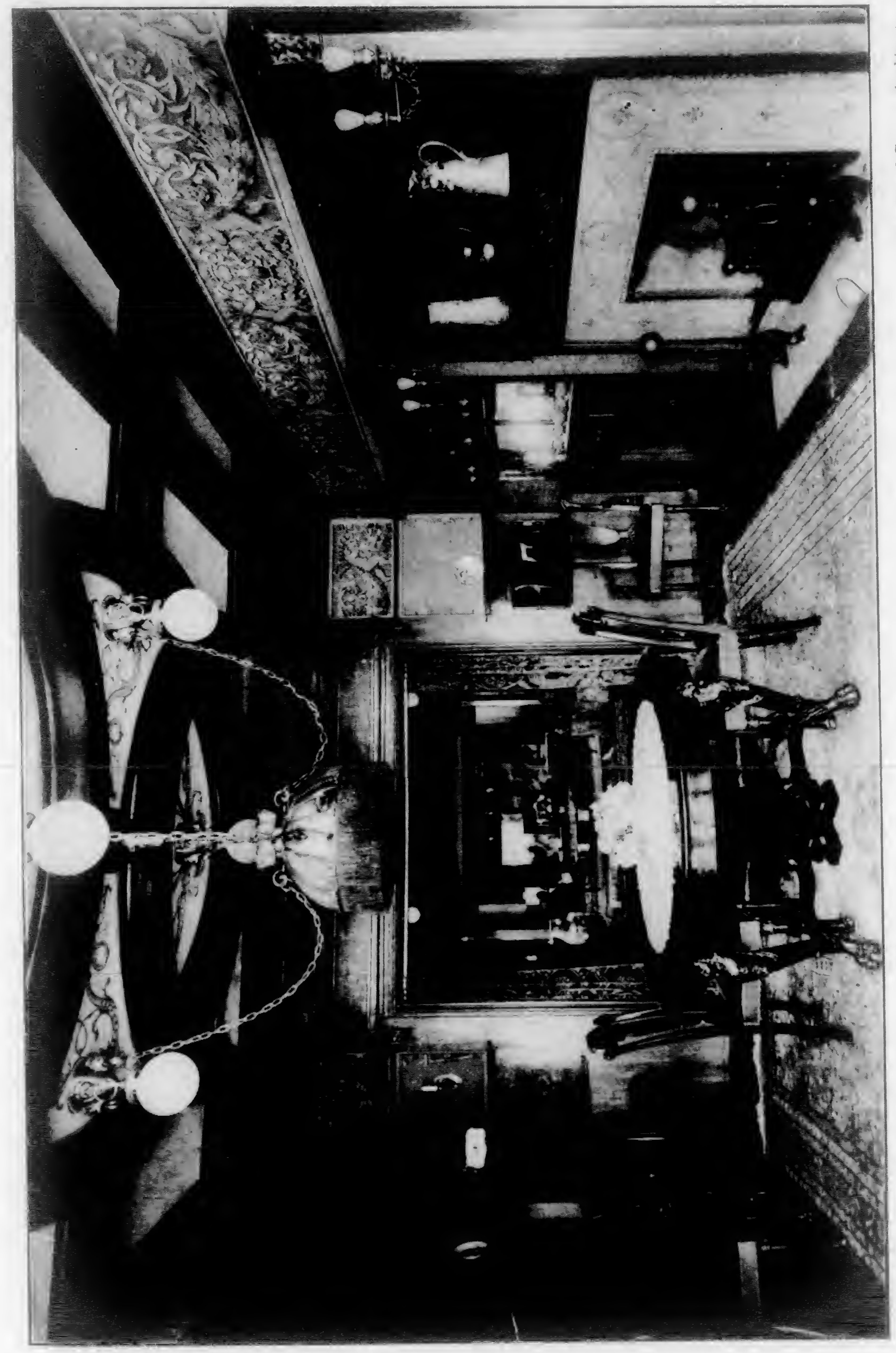
Ebell Club Building, Los Angeles
Hunt and Eager, Architects



Dining Room in Residence of Mr. Geo. W. Dickinson



Residence of Mrs. Vermillion, Los Angeles
Hunt and Eager, Architects



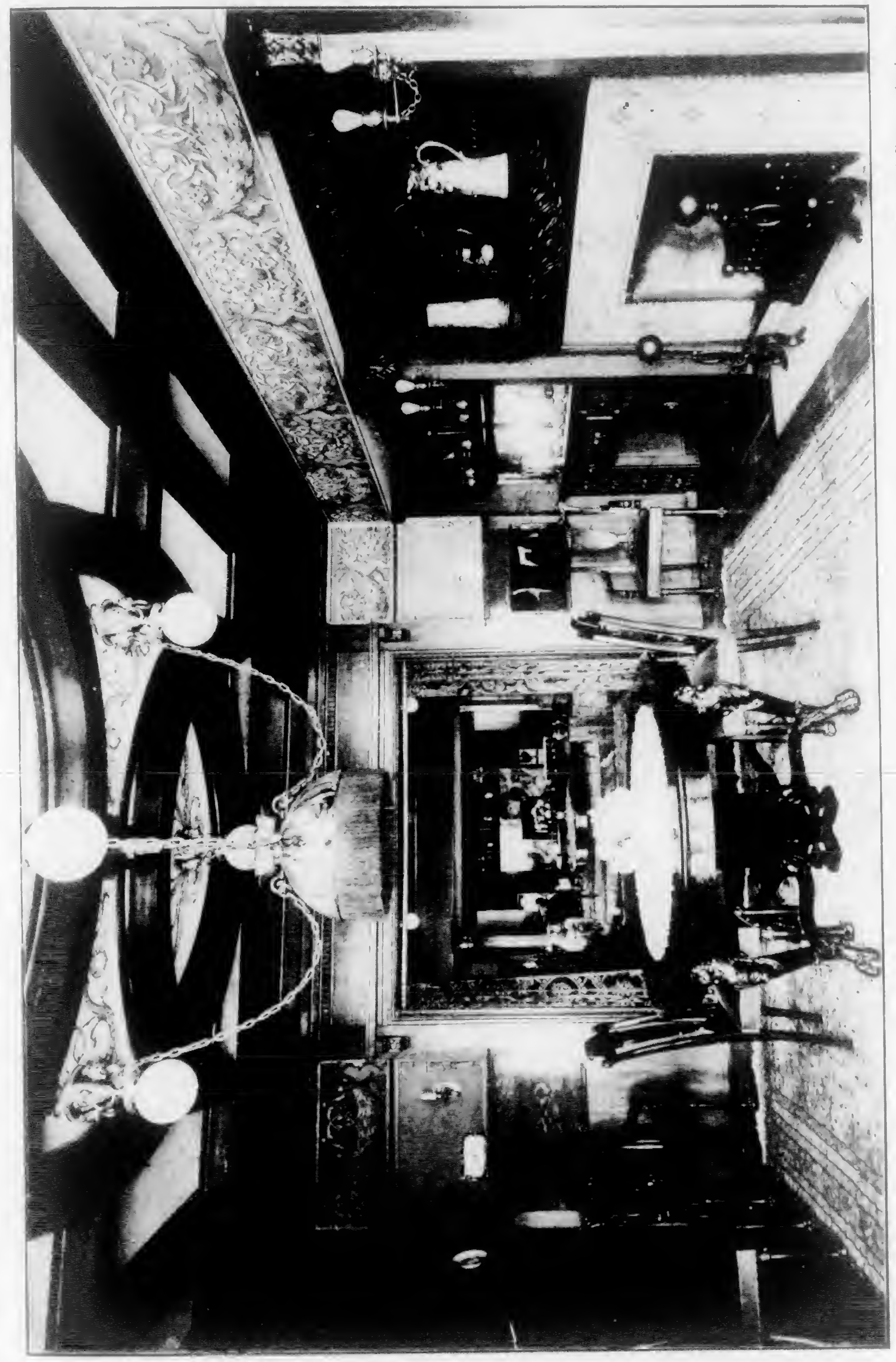
Dining Room in Residence of Mrs. Vermillion, Los Angeles
Hunt and Eager, Architects



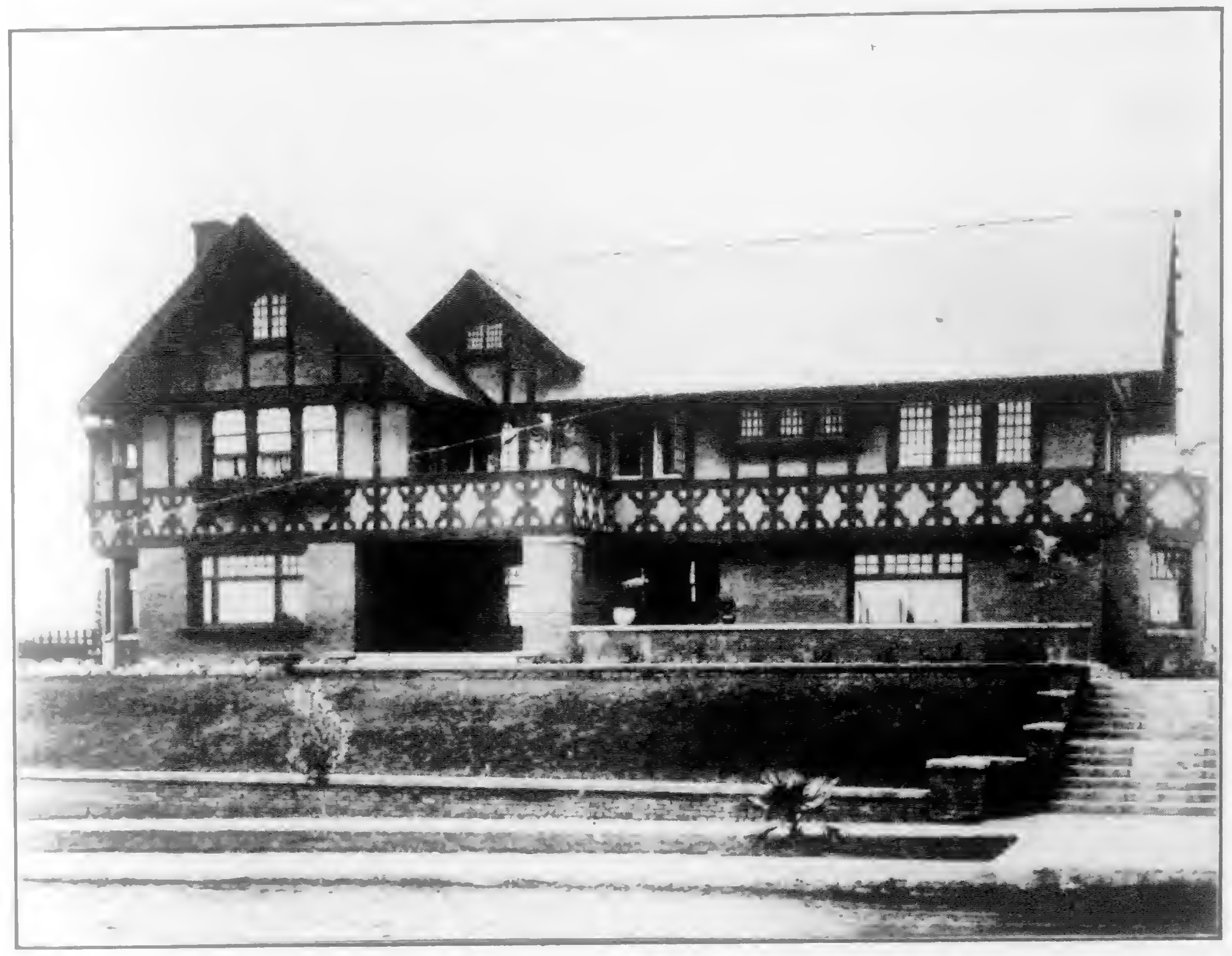
Dining Room in Residence of Mr. Geo. W. Dickinson



Residence of Mrs. Vermillion, Los Angeles
Hunt and Eager, Architects



Dining Room in Residence of Mrs. Vermillion, Los Angeles
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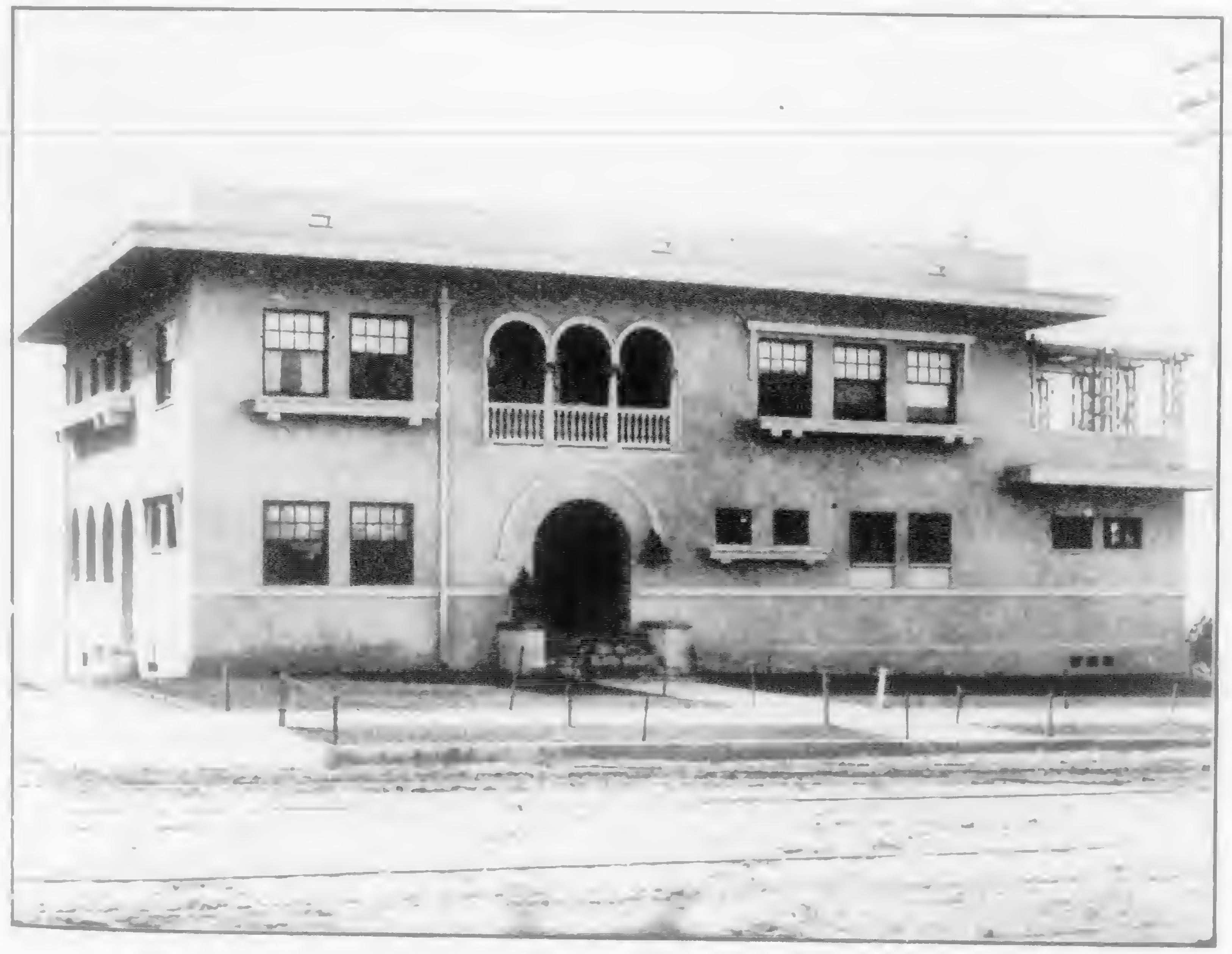
Residence of Mr. William Lacy, Los Angeles
Hunt and Eager, Architects



Residence of Mr. Maurice Hellman, Los Angeles
Hunt and Eager, Architects



The Pollock Bungalow, Hollywood
Hunt and Eager, Architects



Residence of Dr. Wing, Los Angeles
Hunt and Eager, Architects



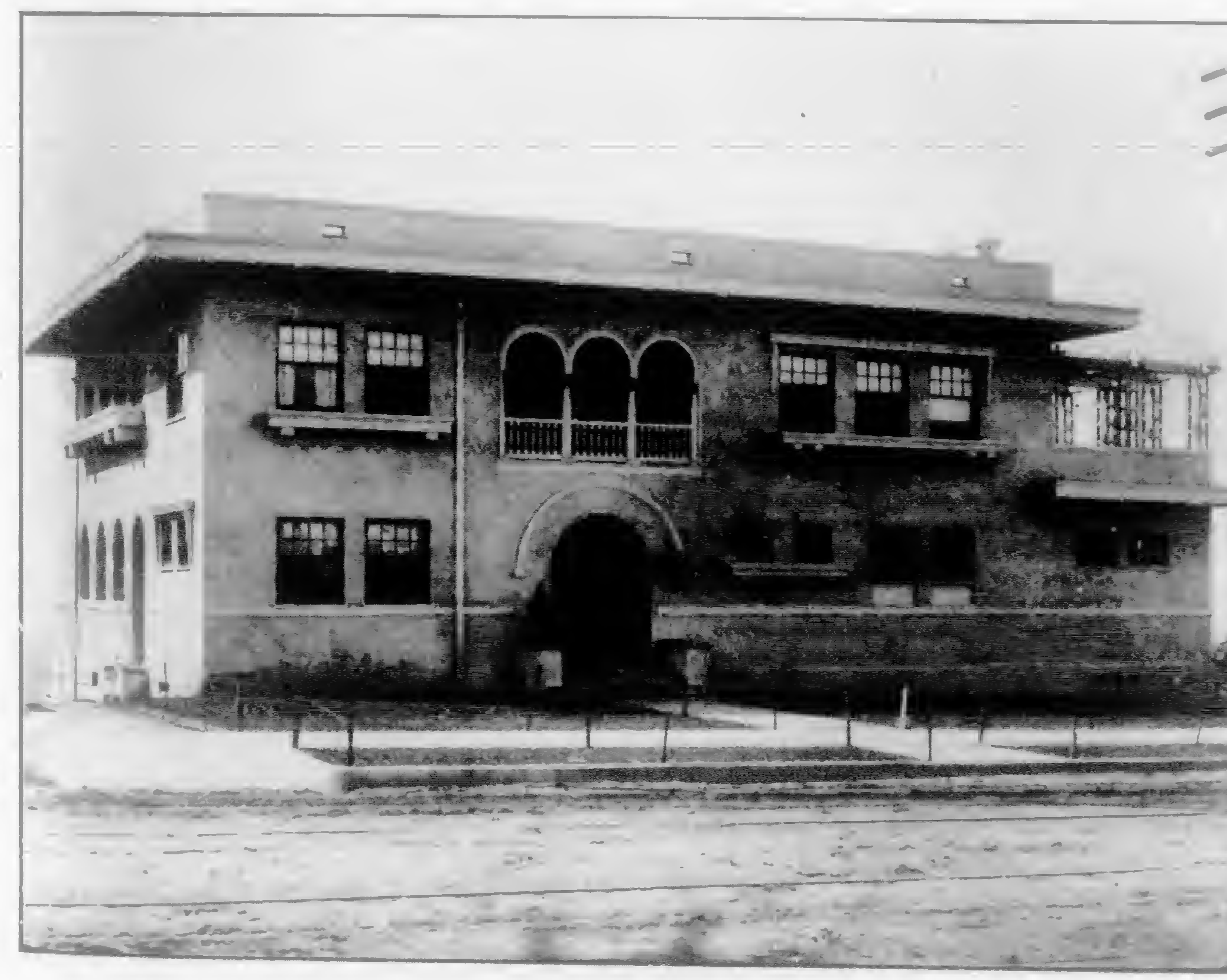
Residence of Mr. William Lacy, Los Angeles
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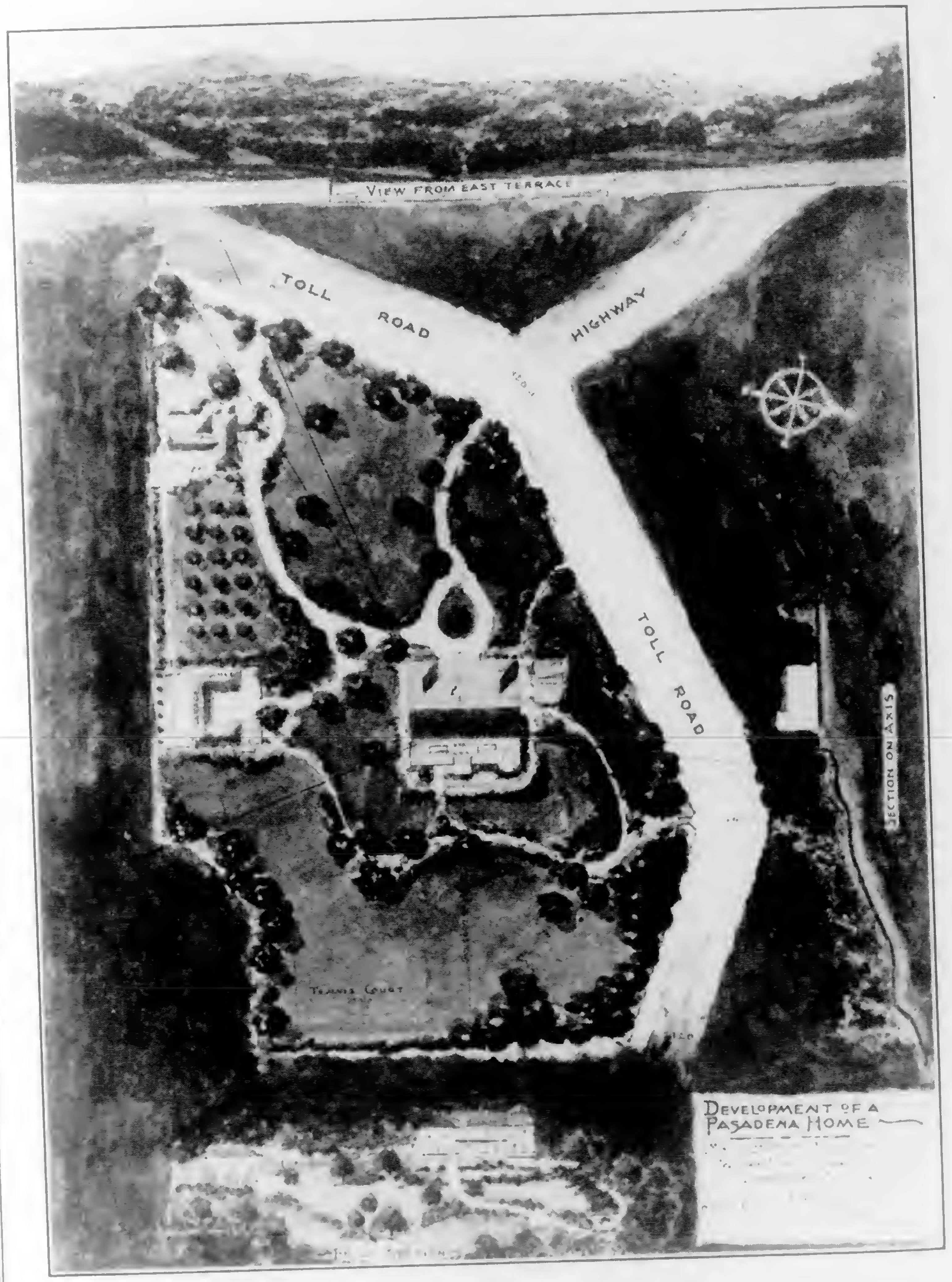
Residence of Mr. Maurice Hellman, Los Angeles
Hunt and Eager, Architects



The Follock Bungalow, Hollywood
Hunt and Eager, Architects



Residence of Dr. Wing, Los Angeles
Hunt and Eager, Architects



Landscape Features of the Estate of C. W. Leffingwell
Wilbur David Cook, Landscape Architect
Hunt and Eager, Architects

Landscape Features of the C. W. Leffingwell Estate

By WILBUR DAVID COOK, Landscape Architect.

C. W. Leffingwell purchased a home site in Pasadena, had it surveyed, secured his architect, had sketch plans prepared for the house and then called in the landscape architect, and the plan which accompanies this article is the result of many a hard fought consultation.

To illustrate, one of the numerous bones of contention was the proper location for the approach drive. At first glance it would appear that the lower right hand corner of the estate was the proper place of entrance. It was conveniently accessible from town and reasonably direct, it was found, however on studying into the matter that it would necessitate a ten per cent grade for almost the entire distance entailing a very heavy cut at a point opposite the upper left hand corner of the house; and greatly mar the beauty of a small natural valley at this point. The temptation for service vehicles of all kinds to enter here would prove almost irresistible, necessitating either a gate or gate lodge. Another point which had to be considered was the existing County Road (The Toll Road) which was already available and at about the same grade as any approach drive which we would have to construct.

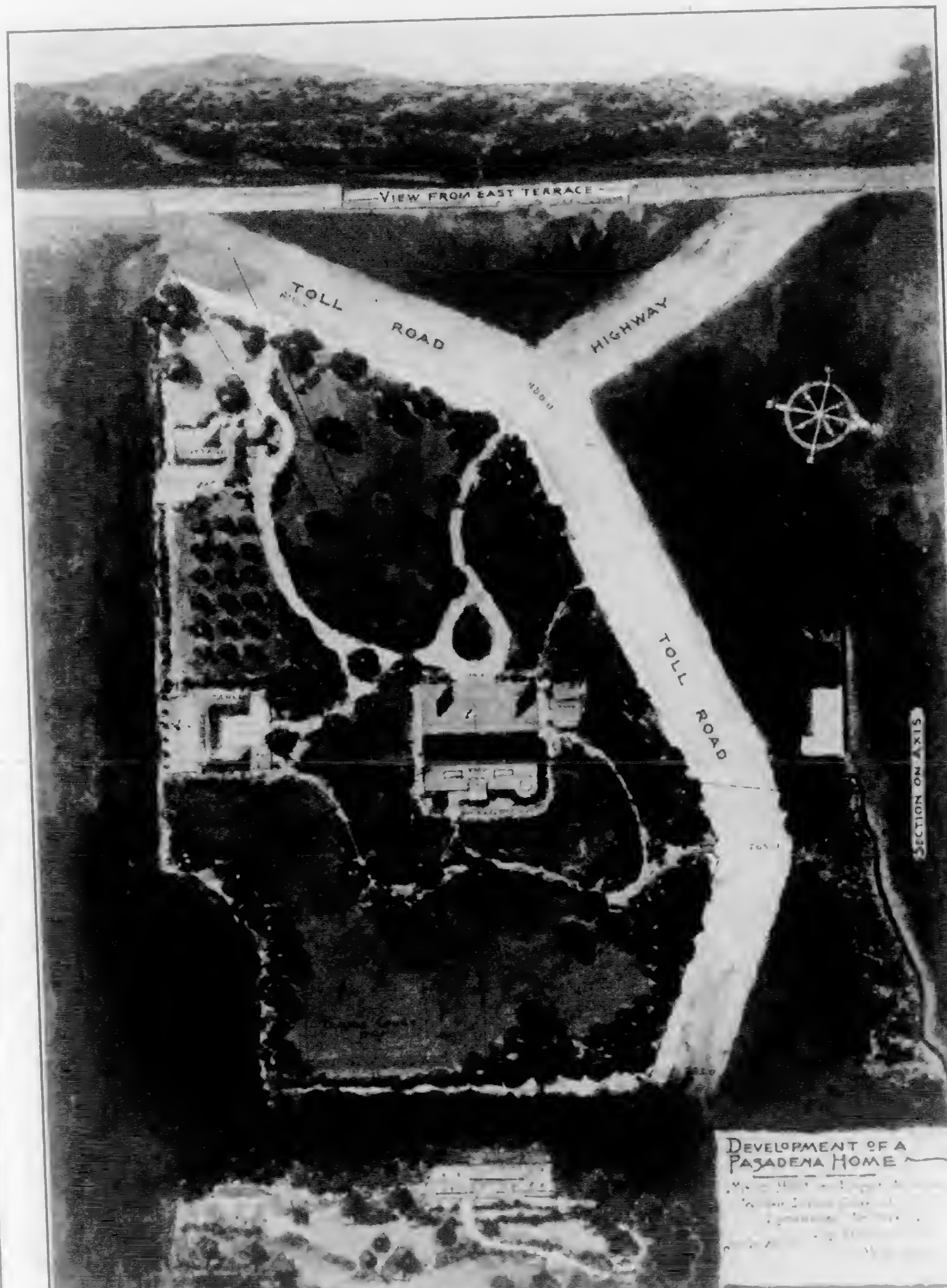
It was finally decided to take advantage of this existing road and enter as shown on plan. In this way we secured an approach drive of less than four per cent and with very little cut or fill. Another point which had to be considered was the handling of the surface water from the next estate just south of us. It was therefore thought best to provide the driveway leading by the cottage. This enabled us to drive the watershed carrying a portion of the water along this driveway in cobblestone gutters to the Toll Road, and a portion toward the garage where it was caught by a catch basin emptying into a six-inch vitrified pipe thence underground to the eastern boundary of the property where it empties into the highway gutter.

The first floor elevation of the house was established at El. 807.00 necessitating but two risers from the approach drive giving us a terrace on the east front of about ten feet in height. The house is provided with an extensive terrace on the east and is crowned by a tower commanding a fine outlook over the adjoining country and is so located that the tower rises from the apex of the convex slope and will look as though it had grown there.

An artistic gate entrance is to be erected at the first angle in wall on the Toll Road, semi-circular in plan to save a thrifty live oak which is growing at this point. Entering at this gateway one climbs a short flight of steps following the walk past its intersection with the by-path to the next short flight passing at this point by a small pergola and rising with the natural contour of the hill and by taking the lead to the right one is led to another short flight which lands you at the foot of the terrace steps. Considering the elevation which had to be overcome (some sixty-four feet) as few steps were used as possible and the grade of this walk did not exceed seven per cent.

This walk also leads to the garage as shown on plan, a side branch passes under the garage yard through a tunnel into the basement and through to the paddock at the rear. This connection being provided for the gardener's convenience.

The garage is located on a side-hill slope a half cut half fill proposition and is supported by retaining walls above and below. The floor



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elevation was established almost ten feet below the first floor elevation of the house to make this building inconspicuous and as much below the line of view as possible, and when the screening plantations are in place a fleeting view only can be obtained. The driveway from the front door to the garage yard is on a five per cent grade and the turn to the right leading to the cottage is on a seven per cent grade for a short distance.

* * *

"Keep Cool"

A GREAT deal of talk is heard these days about confiscatory methods, endangered prosperity and threatened financial disaster.

"Keep Cool," says Secretary Shaw.

Chancellor Day, of Syracuse University, is distressed over "the use of the court and the prosecuting machinery of the country to direct the frenzy created by a long and persistent yellow appeal of demagogism," and Leslie's Weekly expects the time to come when the people will "look back upon this time of frenzied politics (?) with amazement and indignation."

Yet even Secretary Shaw says "Keep Cool."

"Our farms produce $6,500,000,000 per annum," he says. "Our mines yield more than $1,500,000,000. Our forests yield more than $1,000,000,000. These are not exhausted. Our factories yield $12,000,000,000. Our railways earn more than $2,000,000,000.

"The real sources of the people's wealth have not been affected."

"There are no logical reasons for serious conditions," he goes on. "The people will have exactly what they expect."

What do the people expect—not the masses nor the classes, but the people—what do they expect?

They expect prosperity. They expect honest prosperity, where a dollar is worth a dollar, no more and no less.

And that is exactly what they will get.

Some one asked Secretary Bonaparte if he thought that the great corporations of the country were generally conducted on such unlawful principles that the prosecutions deemed necessary by the government would unsettle industrial conditions and lessen our prosperity?

He replied emphatically, "No."

"The vindication of the law," he said, "can in my opinion have only a beneficial effect on the prosperity of the country, although it may demoralize some speculators."

* * *

More Severe Criticism of Granite and Sandstone

(From Brickbuilder)

There is a common conception that granite is one of the most enduring stones, but it is certainly not so in our climate. * * * A granite quarry may have good stone in some portions of the deposit and be utterly worthless in others, and as a general rule it is not safe to use a granite unless the architect knows absolutely its composition and the part of the quarry from which it is taken.

Sandstones, which were formerly so much used in the East, are really the poorest building material in the market. The cementing material in sandstone has a very slight value, and it is probably the poorest material extensively used, so far as resisting the action of frost is concerned, while the presence of iron constitutes an almost fatal defect. It may be said also that very little sandstone is free from iron.

Can Earthquake-Proof Buildings be Erected*

By L. J. MENSCH, C. E.

THE subject of earthquake proof buildings is a vital one for San Francisco and surrounding counties. It is, of course, possible to build earthquake proof buildings of brick, stone and wood.

I dare say that the great majority of well-built buildings of San Francisco stood the earthquake remarkably well, provided that they were not built on what you may call stilts, and where they were properly braced and tied together, nothwithstanding the contrary reports spread all over the country.

I wish to impress upon you tonight the fact that reinforced concrete is the best material adapted to buildings which may have to withstand earthquake shocks, and that we can build an absolutely quakeproof reinforced concrete building at a considerably lower cost than the ordinary steel building whose quakeproof qualities are only problematic. You all know what reinforced concrete means, I shall not expatiate the properties of this material; it would sound commonplace, although it is hardly six years that it was known here. I shall only mention that experimentors all over the scientific world tried to excel each other in the number and scope of tests and I hardly believe that the properties of steel, and I know that the properties of wood, were not so thoroughly investigated as those of reinforced concrete. We know today, without a scintilla of doubt, what the carrying capacity of a reinforced concrete beam is, if reinforced by a given percentage of steel, and I positively assert that you cannot predict with the same degree of exactness the strength of a timber beam.

What was the effect of the earthquake of April, 1906, on the ground of San Francisco? As near as I was able to learn it produced vibrations of an amplitude of less than one-half an inch and a total wave length of about one hundred feet. These vibrations followed each other in various directions and on filled ground caused very serious upheavals to the extent of several feet, and set up in all buildings considerable vibrations. It is clear that the upper parts of a building vibrated with a much larger amplitude than the lower portions and that these vibrations in regard to amplitude depended upon the stiffness of the stories and the connections with the adjacent stories. Assume that the third story of a building was less braced than the second story. The amplitude of the vibrations for the third story was then considerably larger than those for the second story, with the result that great shearing forces were produced at the connections at the third floor level, which forces certainly must have been very large considering the momentum of such great masses being whipped at such a great speed. Now the time of these vibrations coincided only in the rarest cases with the vibrations of the ground, making it thus possible that counter shocks were produced which caused much larger shearing stresses than those before mentioned. If the connections could not stand these horizontal shearing stresses, a horizontal displacement must have taken place, which may or may not have been followed by failure. Such horizontal displacement you can observe in many parts of the City Hall which are still standing and in other buildings and monuments in the city. The fact, that the vibrations depend entirely on the relative stiffness, is also clearly shown by the fact that pictures were thrown from the walls and other objects not in rigid connection with the mass of the buildings had to undergo much more violent movements than the buildings themselves. It

* Paper read before the San Francisco Chapter, A. I. A.

seems therefore advisable in an earthquake country to build buildings as uniform in stiffness as possible throughout the various stories.

Let us now return to the vibrations of the ground. I mentioned that they amounted to less than ½" in a wave length of 100 feet. The vertical displacements made themselves felt in half this length, that is, 50 feet. Let us now assume a building has walls or columns 16 feet on centers, the relative vertical displacements of these walls or columns amounts then to only $\frac{1}{16}$", which is an insignificant amount and certainly can be taken care of without the least cause of uneasiness by either timber, steel or concrete construction. The more or less sudden application of the forces will be equivalent to a relative displacement of perhaps twice this amount, but even one-third of an inch of relative displacement will not as a rule cause undue stresses.

Popularly it is believed that frame buildings are the only proper buildings for an earthquake country because they have a "give", meaning probably that they return after their vibrations to their old positions. Mathematically speaking wood has a coefficient of elasticity of one and a half million, concrete of two and a half million, steel of twenty-nine million. Steel is certainly more perfect elastic, concrete at least just as well elastic as wood and therefore we cannot believe that wood it better adapted on this account. The cause of the better behavior of well built frame buildings over brick or steel buildings in earthquakes lays in the fact that they are built more uniform, they are built on the box principle, the various partitions are well connected with the walls, the whole structure is comparitively very light, therefore the momentum produced by the whipping action of the quakes is very much less than in any other class of buildings and therefore the horizontal shearing force is very much smaller. Now take a well built reinforced concrete building. What is it but a box construction similar to a frame building? It is the invariable practice of the competent designer of reinforced concrete buildings where wind pressure enters into the consideration of the design, to provide at least one or two reinforced concrete cross partition walls to take care of the wind stresses. These partition walls are sometimes objectionable, nevertheless they have to be put in, if the owner wishes to have a building to stand any length of time, or to remain plumb, or to have any factor of safety at all. How much more are such cross partition walls required in a building which is purposed to be quake proof? There is no doubt that the connections of a properly designed and properly built reinforced concrete building are very much stronger than those of a frame building, both absolutely as well as relatively in regard to the greater weight of concrete. Most of the failures of brick buildings were to be ascribed to the poor connections of walls with floors or to the poor bond of the brickwork itself, which could not withstand the shear produced by the momentum of the heavy brick walls.

Reinforced concrete walls weigh one-half and often less than one-half of brick walls which have to do the same duty, and by the nature of the construction are well connected with the floors. It is of course clear that it is not sufficient to design such a building for static stresses alone. The best built building must not necessarily, if this be the case, be able to stand a serious quake. The whipping action produces stresses in every direction in the building, also up and down and as a building is usually only figured for downward loads, the amateur designer might commit a serious blunder in not giving attention to these secondary stresses. Now this is a mistake which is not to be ascribed to reinforced concrete as a building material, and which I am sorry to say is found in more than ninety per cent of all reinforced concrete buildings ever erected. Reinforced concrete has the

disagreeable property of shrinking. How often have you seen that all proper precautions were taken to prevent the effects of shrinkage? Shrinkage cracks are often harmless, but very often they are of vital importance. The most dangerous place is in the connection between girders and floor slabs.

The greater mass of the concrete of the beams tends to shrink away from the slabs, and it is of the utmost importance to prevent this, by the simple and inexpensive use of stirrups which reach from the beams far into the slabs on both sides of the beams. The cracks at the junction of beam and slab reduces the strength of the beam often to one-fourth of that of the Tee section. How much more vital are these stirrups in earthquakes, where these cracks certainly will develop and increase, even if they did not exist before or were only invisible to the eye. The connections of the columns at the various floor levels deserve the greatest attention of the designer. To connect the rods by sleeves eight to twelve inches long is more than sufficient. Three feet long sleeves at least one-half inch larger in diameter than the largest rod they connect should be considered the minimum for good practice, or in case of small rods overlapping of the rods to the extent of thirty to forty times their diameter.

I cannot enough warn you, whether you design a concrete or a steel building, not to make the size of your columns too small, if you want your building to be earthquake proof. If it is absolutely necessary to omit all the partitions in the first story of a building, your only reliance and salvation lays in the columns, and if you reduce their stiffness you set your buildings practically on stilts, and their earthquake proof qualities are then less than doubtful.

Since times immemorial people used to look to the walls for the stability of buildings. Since the introduction of the skeleton principle in steel and reinforced concrete construction the walls are merely curtains, and contribute hardly more to the stiffness of the skeleton than the glass panes of the windows, while a concrete wall is able to increase the stiffness of a concrete or steel pilaster from four to ten times the former rigidity. This is speaking of the stiffness of a building crossways to the direction of the walls. Of course, in the direction of a wall, the latter is of quite a formidable help to the skeleton, even if only 12 inches thick, and probably increases the stiffness of the skeleton from fifty to many hundred times, which is, however, a poor showing in comparison with a reinforced concrete wall which probably stiffens the skeleton from one thousand to ten thousand times and more. If a building is not too narrow or not too much cut up we can safely figure that the floor construction will act as horizontal girders to transmit the horizontal shears to the end walls, which as girders of 50 feet or more in depth are certainly able to take care of these forces. If the walls have very large openings or if the area of the building is large, you have to adopt reinforced concrete partition walls, say in distances of fifty feet. You have then a greater stiffness than in a modern steel boat which, as you know, has to withstand shocks as no other structure to our knowledge.

I promised to prove that you can build a reinforced concrete building which is really earthquake proof for less money than a steel building. In order to do this we have only to compare the cost of the structural parts. From your experience with steel skeleton buildings you know that it takes about 20 lbs. of steel for each square foot of floor in the building. Add to this about one and a half lbs. of steel for the reinforcing of the concrete slabs of small span, you have a total of 21½ lbs. per square foot. You will have to figure on an average of about seven inches of concrete per

square foot for the fireproofing of all columns, girders and for the floor slabs, and you will need at an average about two feet of lumber per square foot to do the form work for the fireproofing. Let us figure the steel erected and painted at the low figure of $75.00 per ton the concrete at 45 cents per cubic foot, the lumber at $60.00 per thousand feet erected, taken out and re-used, we arrive at the total cost of $1.19 per square foot of steel skeleton and fireproofing.

In a reinforced concrete building we shall need an average of not more than seven lbs. of steel, about eight inches of concrete and about three and a half feet of lumber per square foot of floors for the structural part of the building. Figuring in this case much higher unit prices on account of the inexperience of workmen and contractors, and considering that the price of plain steel rods (and I have not found anything in my experience which warrants the use of any kind of patent or fake bars) is only $2.20 per hundred f. o. b. San Francisco in carload lots, we will assume the cost of the reinforcing steel placed as $65.00 per ton concrete at sixty cents per cubic foot, the cost of the form lumber erected, taken out and re-used as $70.00 per thousand, we find that the cost of the reinforced concrete skeleton amounts to 88 cents per square foot against $1.19 in steel.

In order to make the skeleton earthquake proof beyond question, we will figure on providing reinforced concrete partition walls and we will assume that the area of these walls is one fourth of the area of the floors. A reinforced concrete partition cost probably 30 cents per square foot more than a hollow plaster partition, or reduced per square foot of floor, this extra expense would amount to 7½ cents per square foot, or a grand total of 95½ cts., for a really earthquake proof structure, against $1.19 for a steel skeleton building, the condition of which after an earthquake may be serious, if not stiffened by similar partitions. You undoubtedly will agree that I assumed very high unit prices for reinforced concrete construction, which is at present only too necessary on account of the inexperience of all connected with this construction but these prices will certainly be liable to a reduction of at least twenty-five per cent in a year or two, with the perfection of workmanship and with the experience gained by the contractors, a fact which can be found in any part of the United States wherever concrete construction was carried on for a few years. I neither took in account the great savings of reinforced concrete footings over steel beam and concrete footings, which amounts to at least fifty per cent of the cost of the latter, nor did I take into account the very substantial saving by omitting the false ceiling in concrete buildings where square panel construction without intermediate beams are the standard of design, and where the beams may be arranged to come in the partitions, thereby saving in the height of the stories, and offering a more substantial ceiling than the unsatisfactory wire lath and plaster construction. There are yet many other points in favor of reinforced concrete buildings, which it may be worth while for you to consider before you decide on the type of construction you are going to adopt.

* * *

The Vacation

40 weeks' anticipation,
10 of bustling preparation,
1 to pack and reach the station;
1 of final realization.
52

—Outing.

The Remuneration of Architects

By GLENN BROWN, Architect, Secretary of the A. I. A.

MORE or less has been published in the past relative to the fees of architects and the return which they receive for their work.

In England the office of works, one of the recognized ministries of the country, is in charge of all Government buildings, except military barracks, local admiralty buildings and police stations. The great Government buildings in England have been erected by architects who have no connection with the Government.

The remuneration of an architect for his services by sufficient sums to reimburse him for the most careful study of the problem, the most explicit and elaborate preparation of drawings, and efficient supervision of the construction, will secure the client or government the best result in the completed building. Anything less should not be considered.

The proper sum for such services can only be ascertained by what experience has proved to be the cost of producing the work by architects in charge of large buildings and who have given the study, prepared the drawings and conducted business so as to produce good results in completed structures. The expenditure of millions in structures which must permanently beautify or mar the landscape are not proper fields for experimenting with untried methods or inexperienced men.

By an inquiry among the various architects of the country who have been doing such work, I find that the actual office expenses amounts to from 2½ to 3 per cent on the cost of the building; out of this percentage the architect receives nothing. As 5 per cent is the amount usually paid, the 2 or 2½ per cent which remains after paying expenses of the office covers the actual cost of supervision and the remuneration to the architect. If he secures 1 per cent out of this for his service he is fortunate.

The cost of production stated is only for large work; small monumental work costs approximately more.

In this connection, as a proof of what such service costs, and the remuneration usually paid in this country and abroad, the reports of the Government officials and statements from foreign countries go to prove that instead of architects receiving less that the usual 5 per cent they should, to properly compensate them, get a greater percentage in most cases.

Taking the supervising architect's office, which in recent years has been conducted in a thoroughly efficient manner, we find that the office expenses of producing drawings and conducting the work, exclusive of the cost of sites and the cost of buildings erected under the Tarsney act and exclusive of superintendence, have been for three years 6.3 per cent for the office work, on the amount expended in building, while superintendence during the same period cost 2.4 per cent on the amount expended in building, making the total for the preparation of plans and supervision on an average for the past three years of 8.7 per cent on the amount expended by this office, excluding the buildings which have been erected under the Tarsney act.

Captain John B. Sewell, under whose efficient management the Government Printing Office has been built, in his report of November 3, 1903, states the architect's services, draftsmen and office expenses amounted to 6.6 per cent on the cost of the work. This is exclusive of cost of experts in heating, ventilation, plumbing, electrical installation and his own salary. When these items, which would approximate about $20,000 during the period of the building covered by the report, are added to the expenditures, it would bring the percentage of the cost of the building

up to more than 7.5 per cent for drawings and superintendence. The report of the Superintendent for the Capitol for 1902 shows that his own salary not being included, the reconstruction or fireproofing the central portion of the Capitol cost $153,500, and that the pay rolls in the superintendent's office relating to this branch of the work, together with the fee for consulting engineer was $25,813, or a percentage on the cost of work, more than 16¾ per cent. The fee of the consulting engineer, $4760.28, amounts to over 3 per cent on the total cost of the work and 7.7 per cent on the cost of structural steel and general contract, as shown in the report of the Superintendent of the Capitol Building and Grounds, June 30, 1902.

In this connection the fees paid by foreign governments to architects for large pieces of construction show that our architects receive less personal remuneration for similar work done in the United States at the same rate of compensation. The American architect, with higher salaries paid to draftsmen, higher rents and no architectural pupils paying for the privilege of doing work, is receiving smaller remuneration that his professional brother across the water.

In England 5 per cent on the cost of the work is paid to the architect, while much of the time and labor is saved to him by the limited sets of drawings he is expected to furnish and the bills of quantities which are made by the surveyor, and for which the owner pays 2 per cent. A clerk of works and an inspector is provided by the owner or Government. They are selected by and under the orders of the architect.

In France the same system is in vogue as to payments. The municipality of Paris has recently established a schedule of fees for the payment of architects on municipal work, paying 6 per cent on the first 200,000, 5½ per cent on the second 200,000 and 5 per cent on the third 200,000 francs, 4½ per cent on the fourth 200,000 and 4 per cent on all additional cost. Thus the fee on the largest building is between 4 and 5 per cent, and the Government provides, subject to the order and on the indorsement of the architect, a superintendent and a clerk of works as well as the inspection given by the Building Council, while his office expenses and draftsmen's wages are from one-third to one-half what is paid by the American architect.

In Germany the rates paid by the Government on the work when private architects are employed is in accordance with the schedule of the Society of Architects and Engineers. These rates vary according to the character of the building and the cost of the structure, simple buildings, like sheds and factories, being done at a less rate than more ornate structures. A separate increased rate is charged for decoration in the class under which Government buildings are placed. The rate for the most expensive building in their schedule is given at $2,000,000, and the rate for $250,000 worth of decoration and $250,000 worth of furniture makes the rate on the total sum a fraction over 5 per cent. The schedule provides for numerous extra charges for heating, lighting, ventilating, water, sewerage and electrical arrangements and salary for building foreman and inspector. Traveling expenses, acquisition of building site and per diem to the architect while traveling.

The Russian Government pays the architect on the building being erected by the Minister of Marine at the new port of Liban on the Baltic 8 per cent on the cost of the building.

In Italy when an architect or engineer is not working on a salary he receives a 2 per cent retainer, 4 per cent on the completion of his drawings and 8 per cent for the total direction of the works.

The Swiss architects and engineers have a very carefully prepared schedule of charges. The buildings are divided into classes, factories, sheds, etc., being in the first class and for which the smallest percentage is paid. The commission is also graded according to the cost of the structure. In the class to which the Government buildings belong 5 per cent on the total cost is the smallest percentage paid for the largest structure, while it runs up to 8 per cent for small structures of this class.

The clerk of works or superintendent is employed or paid by the owner, but he is under the direction of the architect; all traveling expenses and an additional per diem are charged while traveling in addition to the percentage. Some of the special regulations of this schedule are interesting.

By the various schedules it will be seen that the foreign architect protects his interests more carefully than we do usually in this country against both the Government or the owner and the contractor, demanding payment for extra services for many items which an architect does in this country without extra compensation.

In every instance the answer from foreign countries has been that the architect who designs the building supervises it until completion, although in many countries the Government is represented by technical commissions and inspectors and employs superintendents and clerks of works, they are all, with the exception of the commissions, under the direction of the architect, and the architect is responsible both for design and construction of the building.

After a building of importance is completed, its maintenance, repair and additions thereto are not left to the tender mercies of men unfamiliar with design and construction, but the architect who designed the building is retained at a small yearly salary to maintain or add to the building until his death, when another architect, familiar with the structure, fills his place. In some countries a technical board of works, on which a majority of the members are architects, have charge of the maintenance of government buildings.

It seems necessary to add that from the foregoing data the architects in this country do more for less compensation than do the profession in the other civilized countries of the world.

The cost of work in the engineering profession, which is to a certain extent similar to the work of an architect, may be considered in making a comparison with the cost of producing drawings in an architect's office. It must be remembered that the drawings made by engineers are not so numerous and are less elaborate than those made by architects. The data received from engineers shows that government engineers usually allow 10 per cent on the cost of work for the items of superintendence, field engineering and office expenses. A prominent railroad engineer states that office work and supervision in engineering has cost him 5 to 7½ per cent on the total cost of the work. This is confirmed by another large railroad system where the engineering work actually cost from 5 to 8 per cent, according to the character of the work. Another railroad company, in making estimates, allows for engineering service according to the character of the work from 5 to 10 per cent on the cost of the work. The Commissioner of Public Works of St. Paul says that expenses of engineering work cost 5.11 per cent on the amount expended, while for mechanical work or shop work they allow 15 per cent on the cost for drawings and supervision.

It is customary for contractors when they do work by the day to charge 10 per cent on the cost of material and workmanship. This appears to be a time-honored custom to which no one objects.

The value of services can be measured by the prices paid by capable business men; it has been the custom for years for business men and large corporations to pay architects in this country and Europe 5 per cent on the cost of

buildings. This is an old custom, which has in the last few years become a burden upon architects, as building has been rapidly becoming more and more complicated with the introduction of mechanical plants for elevators, electric lights, telephone service, heating and ventilating plants, all of which must come under the control of the architect and be considered by him in relation to the building as a whole. The employment of experts, paid by the client in these various branches, only partially relieves the architect.—Inland Architect.

* * *

The Comparative Cost of Wood and Concrete Piles

THE increasing use of concrete piles brings up the question as to how they compare in cost with wood piles, upon whose domain they are encroaching to a constantly increasing extent. One of the chief factors making toward the increased cost of wood piles is their growing scarcity. This is largely due to the recklessness with which our forests are being yearly depleted.

The cost of concrete piles as compared to that of wood piles was brought out in a striking manner during the erection of the new buildings of the United States Naval Academy at Annapolis, Maryland. The original plans called for wood piles, but as the allotment made for the various buildings had been exceeded, it was found necessary to reduce costs wherever possible. Calculations showed that by using concrete piles, a saving of over $27,000, or more than 50% of the cost of wood piles could be effected.

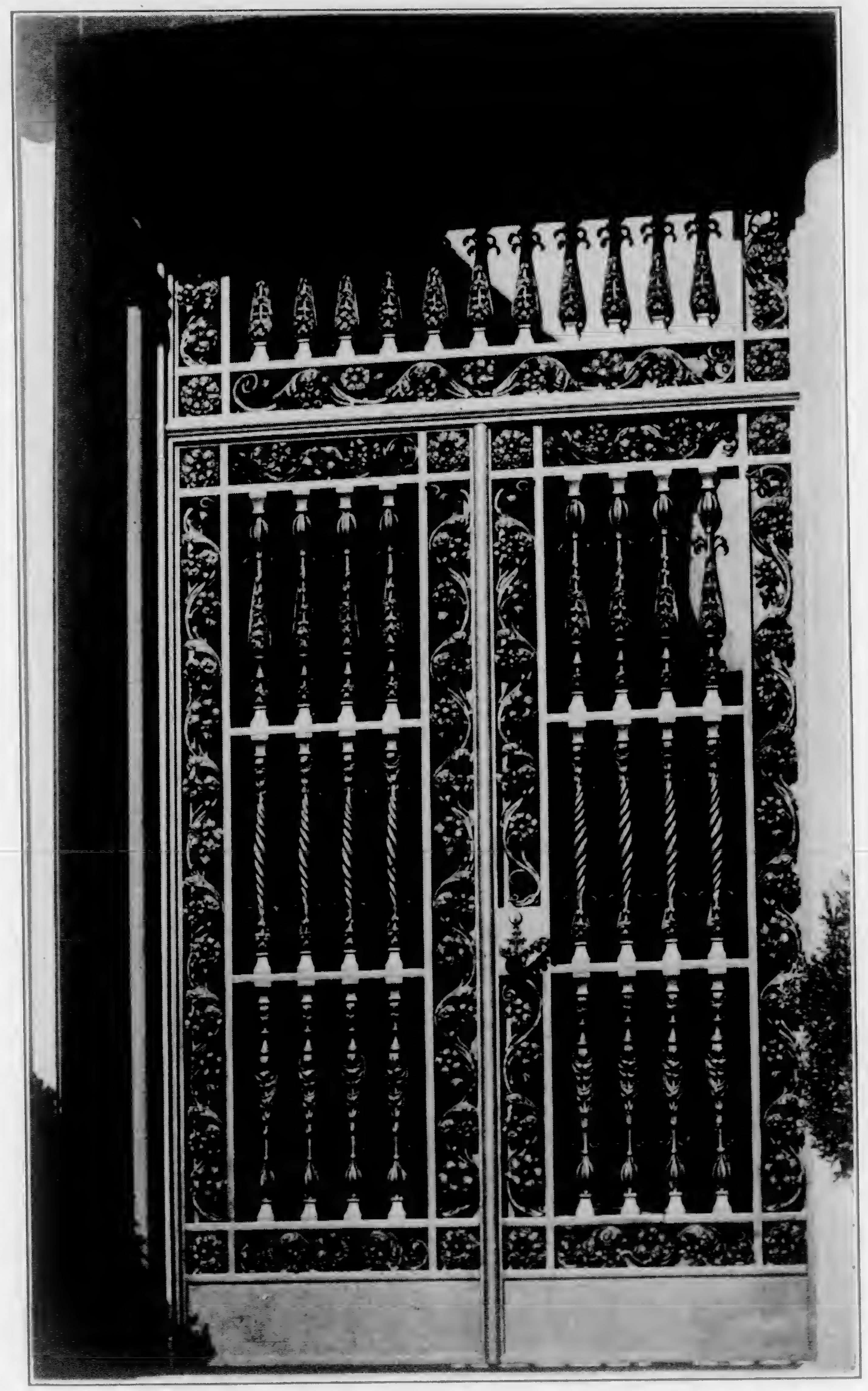
The various factors which tended toward the economy resulting from the substitution of concrete piles are thus stated by Walter R. Harper, inspector in charge of the work; 2,193 wood piles were replaced by 885 concrete piles; 4,543 yards of excavation were reduced to 1,038 yards, saving 3,504 yards; and 3,250 yards of concrete footing were reduced to 986 yards, thus saving 2,264 yards. Shoring and pumping, which would have cost $4,000, had wood piles been used, was entirely eliminated. This indicates, in a measure the means by which foundation costs were reduced as stated. Furthermore, the permanence of the foundation is beyond question. This would not have been the case, had wood piles been used.

* * *

A Reversible Theatre Floor

An interesting as well as novel feature of the new Apollo Music Hall on the Rue de Clichy, Paris, is the reversible auditorium floor, which makes it possible to change the parquet into a dancing floor in the short space of seven minutes. On one side of the floor are fitted 500 chairs of the usual folding variety, and on the other side it is planked with hard wood, waxed and polished. During the performance each night it is pitched at an angle of about 15 degrees, like the floor of any other theatre. When the show is over and the dancing begins it is absolutely level. When the curtain falls the seat holders are hustled back into the orchestra circle and the foyers, and then the mechanism is set in operation.

The floor, or rather the two floors, are built on each side of a framework of steel girders. This is hung on pivots, and when the machinery is set in motion it simply turns the other side up. The huge seesaw—it measures about 45 x 50 feet—stops at the appropriate angle when it is to be an auditorium and is secured there by strong supports.



Bronze Doors in Residence of Dr. William Tevis
Designed by John Galen Howard, Architect
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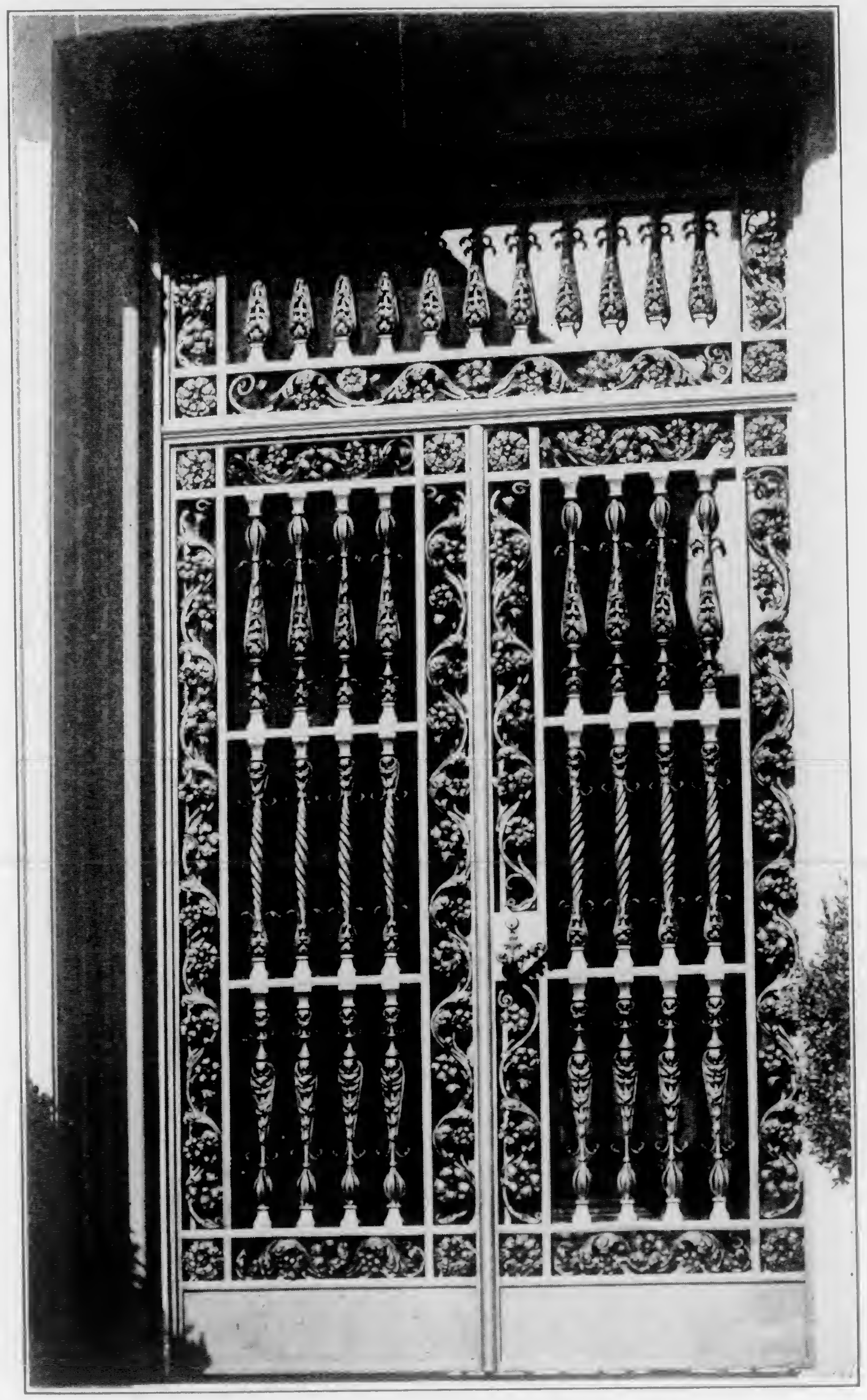
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The Safety of Our Skyscrapers

By F. W. FITZPATRICK, Executive Officer of the Intn'l Soc. of Building Commissioners.

THE alarming prophecy made by Mr. Babb, the president of the New York Board of Underwriters, that it is only a question of time when there would be a grand conflagration in New York's down-down "sky-scrapers", is stirring up a tremendous ado and some needless alarm in that city. As a matter of fact those buildings, even as they are now, are about as safe as any section of any city in the country and with a few additional precautions could be made the safest abodes one could find anywhere.

Generally speaking, the skyscrapers are of steel frame, thoroughly protected from fire with brick and fireproofing tile so that there is absolutely nothing structural upon which fire could prey. The contents of the buildings offer the greatest element of danger. If the owners would but close off the stairs and elevator shafts, thus making each story a separate unit or virtually a building by itself, nothing but the contents of some one story or part of it could be destroyed by any internal fire. The greatest danger is that fire would find ingress to many of these stories at the same time from some external blaze. One cannot compare the New York down town district with that of San Francisco or that of Baltimore. It is of a much more substantial character and the skyscrapers themselves are also much better built. Make it impossible for fire to be communicated from adjoining buildings, and that can be done by making every window a barrier by using metallic sash and wire glass, and you have lopped off just eighty per cent of the existing danger! Provide ample local water supply, tanks, etc, on the top of those buildings and then train the employees so that they are not dependent upon the city fire departments for extinguishing incipient fires within and you have in those skyscrapers a veritable bulwark against the progress of any conflagration. Indeed, the fact that so many of New York's and Chicago's tall buildings are close together insures their safety. Further, although it may seem paradoxical, if you could build an entire city or at least a district of it of nothing but incombustible buildings, they need not be made what is called "fireproof", because you would have eliminated the possibility of fire by giving it nothing upon which to feed.

Admitting, for the sake of argument, that Mr. Babb's note of alarm is justifiable, is it not a bit late for the insurance companies to cry "wolf, wolf"? If tall buildings are not the proper things to build they had it in their power to prevent their construction; if fireproof buildings are the proper structures to erect, they have it in their power to make it so that none others could be built; indeed the insurance people are well-nigh omnipotent in matters of construction and can reasonably be blamed for nine-tenths of the ills in that connection from which we suffer. It may seem a bit harsh, but I blame them more than anything else for San Francisco's awful fire.

None know better than the insurance engineers how buildings should be built. For instance they have given us in the Board of Underwriters' Laboratory in Chicago, the one perfect example of a full-fledged fireproof building in the country, but spite of that knowledge they have virtually connived at inferior construction by not making their rates upon such buildings prohibitive. In San Francisco the insurance rate was ridiculously low, because, forsooth, there was such a good fire department, and the result was that people built only as well as they had to, or as well as the rates they

could get justified them in doing, and the major part of the construction there, was, to use a mild term, rotten. Apart from any sentimental, public-spirited reasons the insurance companies should make their rates on poor building higher and much lower than they are on safe, first-class construction. That is one of the principal things that will induce people to build properly. Besides it would be sound business policy for the companies. That spite of all their scientific tabulations and reasonable basis of expectations, etc., so many of them go "to the wall" in normal times and they are all so mightily squeezed after each great conflagration is proof that, skilled and shrewd as they may be, they are not infallible.

More than that I would even go so far as to say that a good deal of the insurance business is secured under false pretenses. Here is the modus operandi: And it is the history of almost every city. First insurance rates are made low upon all classes of buildings. The business men who build, going at the proposition wrong end to, find out just how imperfect a construction is permitted by the insurance people at certain rates, and build accordingly, shoddily. They are given to understand that that is all that is really expected of them. Time goes on, an examining committee of the companies visits the city, finds perhaps an unexpected aggregation of poor buildings and issues an ultimatum to the authorities that this and that improvement has to be made in the water supply and additional apparatus and firemen have to be provided. All this means more tax to the citizens and in the meantime the city declared to be so combustible that a higher, sometimes an exorbiant rate is established on all, old and new buildings. The companies could have foreseen this condition and prevented it, but they or their agents were so anxious for business and immediate profit that little thought was given to the future. Granted that the people should not be ignorant, that they should have built well in spite of the inducements offered not to, by the companies, yet the fact remains that the latter have virtually aided and abetted them in poor building and then turned around and made them pay for their fun.

People will only build as well as they are compelled to and it is "up to" the authorities and the insurance companies, our two great governing bodies—however unpleasant it may be to consider one of them in that light—to make it so that skyscraper or cottage, court-house or stable shall be built well and so that our lives and property may be safeguarded in all our buildings. It can be done and easily.

* * *

Using His Friends

When Thomas A. Edison was living in Menlo Park, a visitor from New York said to him one day:

"By the way, your front gate needs repairing. It was all I could do to get it open. You ought to have it trimmed, or greased, or something."

Mr. Edison laughed.

"Oh, no," he said, "Oh, no."

"Why not?" asked the visitor.

"Because," was the reply, "every one who comes through that gate pumps two buckets of water into the tank on the roof."—Washington Star.

* * *

'Ah, that's pretty!" said Snooks, looking over a number of architectural designs. "What is that?"

"That," said the architect, "is a fifteen-hundred-dollar bungalow."

"What will it cost to build it?" asked Mr. Snooks.

"About $8,000," said the architect.—Judge.

Concrete Water-Proofing Under Heavy Water Pressure

IN VIEW of the great importance of the problem of water-proofing concrete construction, particularly in some sections of San Francisco, the following extracts from a report of W. E. Wagner, C. E., will be read with interest. This report is furnished to us by The Building Material Co., Inc., agents for the manufacturers of the water-proofing referred to in the report. This report also appeared in a recent issue of the Engineering Record:

"The excavation for a well 6 ft. in diameter and 80 ft. deep, for a shot tower built for the Equitable Powder Co., of East Alton, Ill., was recently made in sand, gravel and clay which carried large quantities of water, and a perfectly waterproof concrete lining provided for it under particularly difficult conditions. The works of the power company are two miles from the Mississippi River, but owing to the many and varied strata of sand and clay encountered in the excavation, it is considered that the course of the river was at one time over the site. A test hole put down at the latter to a depth of 40 ft. with a 2-in. pipe determined that about 10 ft. below the surface was a stratum of sand, 6 to 8 ft. thick, which changed gradually into coarse sand and gravel containing a large amount of water. Under this sand and gravel was a bed of blue clay followed in order by strata of fire clay, quicksand and then clay again.

"A well with a clear diameter of 6 ft. being necessary, and a 9-in. concrete lining having been adopted, an excavation at least 7. 5 ft. in diameter had to be made. The nature of the materials to be passed through was considered to be such that a one-piece casting of constant diameter could not be forced down. Accordingly the casing was made in eight vertical, cylindrical sections built of 5-16-in. boiler plate. Each of these sections had a 1½ x 3-in. reinforcing ring at the top and bottom, the top ring being riveted to the outside and the bottom ring to the inside of the casing. The section at the top was 10.5 ft. in diameter, the next one below it, 10 ft. 1 in. and so on, each section differing by 5 in. from the previous section in order that the various sections could be telescoped and the joint between the reinforcing rings calked with oakum. Each section was prevented from sliding down over the one below it by ½ x 3 in. angles bolted to it; these angles also locked the sections together.

"The first and second sections were put down without any difficulty, the excavated material being taken out in buckets raised to the surface by a hoisting engine, and the water encountered discharged by a steam siphon. The real difficulties were first encountered in sinking the third section when the water began to flow in such quantities that the siphon could no longer handle it, so a 500-gal. duplex pump was installed. This pump was set on a platform swung at the bottom of the excavation on a wire cable suspended over a chain block at the top of the well, enabling the platform to be lowered or raised as desired. The pump could only just handle the water that flowed into the excavation from the coarse gravel encountered in sinking the third section. The sinking of the last few feet of the latter was in clay and was accomplished without difficulty.

"In sinking the fourth casing, however, work was nearly stopped when the cutting edge entered a bed of quicksand. The section was finally forced through the quicksand with eight jackscrews spaced equally around the rim. After penetrating about 18 in. into the clay below the quicksand, the power afforded by these jackscrews was found to be inadequate to force the shell down further, so this section was left 1 ft. above its proper place. By this time the water had been nearly shut off by making the excavation slightly smaller than the ring, the remaining clay forming an almost watertight joint. During the sinking of this and all the subsequent sections the joints between the latter would occasionally break loose and until they could be calked again large volumes of water carrying sand and clay would pour into the excavation. This calking could only be done with great difficulty as the leak would travel around the casing and force out the oakum in fresh places. The joints could not be made tight enough so they could be poured with lead and no other means could be devised to make them dry enough to permit concrete to be deposited against them, for of course the smallest leak would have washed out the green cement.

"The large horizontal pump was found to be unsuited to the work so a vertical outside packed plunger pump with a capacity of 33 gal. a minute was secured. At this time there was a leakage of only 5 to 6 gal. a minute which came through the joints or followed down the outside of the casing and came in at the bottom. Good progress was made for a time under these conditions, when suddenly a stream of water forced its way up through the clay in the bottom and the large pump was placed in service again. The last clay was removed 10 to 12 ft. below this break, leaving a bed of sand carrying a heavy flow of water. After considerable difficulty with the pump, the casing was forced down by working the jacks and excavating the sand simultaneously. After sinking the section 7 or 8 feet. in this manner the pressure on the outside of the casing caused the water to gush forth and pile 3 or 4 ft. of sand up in the bottom of the excavation. By carefully removing this sand and at the same time forcing the casing, a foot or more could be gained before another rush of sand and water would temporarily suspend the work, making progress slow.

"The leaks which occasionally developed at the joints had meanwhile carried so much sand and clay into the excavation that the surface of the ground had cracked and settled over an area 40 ft. in diameter around the mouth of the well. This sinking finally became so marked that the decision was made not to go any lower, for although the last section had not been put down an extra 7 ft. of depth was gained by the settling of the ground at the surface. Before preparations could be made to build the concrete lining, however, a heavy flow of water broke through between the fourth and fifth sections and the subsequent movement of the soil around the casing squeezed the latter to an egg shape. Fearing the entire casing might collapse the well was allowed to fill in order to balance the pressure on both sides of the casing. As this occurred late in the fall operations were suspended until spring.

"A steam-driven deep-well pump, with a Cook well point, was set up when work was started in the spring, and proved very satisfactory in keeping down the water. When the latter had been removed it was found that about 20 ft. of material had filled in at the bottom of the excavation. As soon as this was removed the sand again began to come in, but the bottom was readily sealed with two layers of sacks of concrete. The water was then permitted to rise in order to relieve the pressure on the concrete while it was setting. When this concrete was hard, the water was drawn down again and 30 in. of concrete laid over that in the sacks. A rectangular opening was left in this floor for the well point on the suction of the deep well-pump. This opening was covered with steel plates placed around the well point and a 12-in. concrete floor laid over the whole bottom. A 5-in. threaded pipe fitted with a flange was also placed through the floor to prevent the water pressure

coming on the latter if the pump failed. This 5-in. pipe was provided with a blank flange tapped for a 1-in. and a 2-in. pipe which were used later in filling the opening around the well point.

The concrete lining was placed in forms built of 2 x 4 in. lagging spiked to circular ribs. These forms were made in sections 10 ft. long, the length of each section of the casing, and were built in six segments. New ribs were required for each section owing to the changes in the diameter of the excavation, but the lagging was used repeatedly. The forms were made above ground and the segments lowered into the well, where those of a section could be bolted together and beveled ready for the concrete in 2 to 3 hours.

"The angle braces on the casing which were not already sheared off when the water was drawn down in the spring were removed. The joints between the sections were then calked with fresh oakum, and dried white pine tongue and grooved wedges were driven into them with sledges. In spite of these precautions the joints continued to leak so they were covered with strips of tin, leaving a hollow at the joint through which the water was conducted to a pipe leading through the forms.

"The concrete mixture consisted of 1 part Portland cement, containing 1½ per cent by weight of Medusa waterproofing compound, 2 parts of coarse river sand and 4 parts of crushed limestone, which would pass through a 1-in. screen and be held on a ¼-in. screen. Tests of various waterproofing substances, such as a mixture of alum and soft soap and hydrated lime, were made before the work was commenced, with the result that the Medusa compound was adopted. Test blocks of concrete containing 1 per cent of this compound mixed with cement showed no penetration over 1-16 in. in depth after being soaked for 48 hours in hot water, while plain concrete mixed in the same manner was found to be saturated under the same conditions.

"No night work was done in placing the concrete, but the damp air in the well prevented the latter from attaining much of a permanent set over night, and the surface of the finish work was carefully washed with neat cement each morning. The water was allowed to rise in the well as the concrete was brought up and after the work was finished was allowed to stand for six weeks so the concrete would be sufficiently hardened to resist the pressure head that would be brought against it. When the water was pumped out the various pipes that had been left in the concrete to handle the water from the joints in the casing were filled. The compartment containing the point of the pump was finally filled through the 2-in. pipe in the flange on the 5-in. pipe left in the floor. A certain amount of seepage was expected through the lining, but after remaining damp for several months the concrete became as dry as concrete above ground.

"The 2 to 3-in. cracks in the surface of the ground around the mouth of the well were washed full of sand and then a square several feet larger than the footing for the building was excavated to a depth of 14 ft., the upper 6 ft. in sunken ground and the remainder in solid earth. The bottom of the excavation was then covered with sand on which the footing walls and piers for the tower were built, the remainder of the excavation being filled to the ground level again with earth. Elevations determined on the footing walls showed a slight settlement when the full load of the superstructure was first placed on them, but this has now ceased and the tower has not been strained in any way."

* * *

Beware of the man who is affected with excessive politeness. He probably has designs on a slice of your bank balance.

Electrolytic Corrosion of Iron and Steel in Reinforced Concrete

IN A paper presented to the American Institute of Electrical Engineers, Mr. A. A. Knudsen gives the results of some experiments which he has made and which he thinks have proven that electrolysis will affect steel imbedded in concrete, wherever the electric current leaves the steel, and that the disintegration of the concrete in the vicinity follows as one of the consequences. His conclusions regarding the protection of steel from corrosion and of concrete from disintegration are stated as follows:

Coatings of various kinds of paint or varnishes will be of little use as an insulation, for it must be borne in mind that not only a moisture resistant is required, but an insulation that will resist continual moisture, and also that will stand the pressure of great weight. From laboratory experiments as well as observations in practice, we draw the following conclusions:

1. Steel structures are well preserved from ordinary corrosion by concrete placed either in salt or fresh water. This, however, has long been known.

2. If but a small fraction of an ampere of electricity passes from an interior metallic column or structure into concrete or masonry as usually made, there will be corrosion of the metal and disintegration to the concrete masonry.

3. Structures of steel in concrete that are subject to sea water are in more danger from electrolytic action than those in fresh water, by reason of the lower resistance of concrete in the sea water as shown by the laboratory experiments.

4. In no sense can concrete be considered an insulator, and it is from all appearances just as good an electrolyte as any of the soils found in the earth.

* * *

He was a Union Man

Two miners got into a fight one night in a saloon in one of California's busy mining camps.

They were giving it to each other hot and heavy, when another miner, by the name of Riley, tried to separate them.

While he was trying to separate them a constable came in and arrested them.

Next morning, when they were up before the judge for trial, Riley kept interrupting the proceedings by declaring he wasn't fighting, only trying to part them.

The judge tried to quiet him by telling him that he was held as a witness only, and, as he did not stop, the judge said: "Riley you are sentenced to pay a fine of $10 or serve 10 days in jail for contempt of court."

With that Riley jumped up more excited than ever, and said: "No you won't judge. I won't go to your old jail for 10 days. No, sir; I am a union man and b'gorry you can't put me in your old jail for a dollar a day, b'gorry. Give me $3 a day, judge, and I'll go."

The judge told Riley he would give him two minutes to leave the room, or he would enforce the sentence.

"All right, b'gorry, judge," said Riley, as he left the room. "If you won't give me $3 a day, I'll go. I ain't no scab."

Lighting Fixtures—Good and Bad*

SUCCESS in selecting what is in comfortable good taste without having to pay the price which lies beyond what one can really afford, comes from knowing where to look. This is true in all things, but particularly so in the matter of lighting fixtures. This is due mainly to the fact that the majority of salesmen do not so much concern themselves with the particular requirements of each and every case from an artistic point of view, as in making sales—and perhaps that is only natural.



Fig. 1.

The purchaser is often enough, far from knowing what he wants. It can hardly be otherwise, for when one has spent practically his entire time and energies making enough money at his own particular calling to build a house, he can hardly be expected to be altogether capable in making a proper choice in the matter.

"Style," as the word is commonly used, suggests that which is good and proper, the right thing in the right place—that which is "neat but not gaudy"; that which one can enjoy the more as time goes by and (recognizing the fact that we all live in more or less fear of what our neighbors think of us) that respectability in our household goods that gives us assurance that friends will not come and call and think things that they would not say to us.

One of the unfortunate phases of the fixture situation doubtless lies in a too prevalent tendency toward "straining for effect." The ordinary person borne down with the cares of house-building, by the time the question of fixtures has arisen (which is almost invariably the last) has reached a point where a good salesman can, indeed, be a friend in need; left to his own resources he may select something that is wrong, and that he suspects is wrong. All he needs is good advice. The salesman who has taken pains to study into the subject and has become an artist in his line, prepared on occasion not only to give advice but to tell why, may have his troubles like everyone else for holding by his convictions to a reasonable degree; but he stands a better chance in the end than the timid type who is all "yes, sir, you're right, sir; just as you say; thank you, sir."



Fig. 2.

It is related that a prominent fixture company, upon being consulted in regard to fixtures for an installation of more than ordinary interest, carefully investigated the case. The prospective customer was offered several choices in the selection of fixtures which would doubtless have reflected fair credit to all concerned. But no—the prospective purchaser would have none of these, insisting rather upon a combination that seemed to the manufacturers to be at such atrocious variance with everything that lay within the realm of good taste that a protest was offered by the company; it would do almost anything but that which was suggested—anything! It was "impossible," this particular combination.

* From the Illuminating Engineer. Illustrations are photographs of Enos fixtures.



Fig. 4.

The company held, with expressed good faith in the matter, that sooner or later their clients would surely be displeased with the results along the lines to which they were adhering, to the end that, as the story goes, with the best of business friendship existing, the company finally pleaded permission to withdraw rather than perpetrate what, to its conviction, would have proved most unsatisfactory. The company refused to perform the operation, so to speak, and the opportunity of doing so passed to some more amenable concern. This company claims, however, that it has gained far more than it has lost by such procedure.



Fig. 3.

Its manager, in setting forth this position, said: "What is the use in our having a standard unless we are to stick to it? If we have a fair name and would hold it, we must protect it, mustn't we? Besides, may we not protect to the best of our knowledge the interests of our customers? That has been our custom for years and we are still doing business.

"An acquaintance of mine, for instance, recently came to me for advice. He had a pretty good house, but had come to a point where he realized that he must economize on his lighting fixtures. All well and good. I suggested that he cut his selections to the point of simplicity rather than install some pieces of elaborate design, the very weakness of which would be evident with the appropriations available. Because a piece is simple in its conception it need not necessarily show cheapness. There's nothing very remarkable about that, is there?"

Good Fixtures

As an illustration of such work the following designs were offered as suggestive:

Fig. 1 shows a simple bent arm, with lines that follow according to the description of the designer. This design has the advantage of being harmonious in any simple room and commends itself as being that character of which one would not tire. It would look well in a house that might have no great pretensions or in one that was fairly expensive in its appointments.

Fig. 2 is a good example of the old order of lamp that has not been affected by the introduction of electricity and is strong from the standpoint of proper illumination; while still retaining the effect of an oil lamp it suitably adapts itself to modern conditions. It might well be used in the English, Colonial or Dutch style of house.



Fig. 5.

Fig. 3 is a bracket built along Colonial lines, successfully concealing the mechanical appliances necessary in the use of electricity, the arm terminating as it does in the flower-like effect which conceals the electric socket in which the glass follows the lines of the shell that holds it. This also is a piece of which one certainly would never tire and is an ornament as well as a lighting piece.

Fig. 4 shows a bracket along the lines of the new order of work. The bracket has been studied to produce harmony and, as in the other instances the ugly mechanical effects have been concealed.

Fig. 5 might be best classified as a bracket of the older order of work. Pieces of this kind might have been found in the old world castles. The charm of the design is retained even with the modernizing necessary to comply with present day lighting.



Fig. 6.

On the Contrary

In extreme contrast with the design heretofore shown, some anonymous creations indicating general weakness are submitted; by weakness is meant particularly a lack of purpose in any direction whatever and suggestive of an effort toward decoration which is unsuccessful because of glaring in-



Fig. 7.



Fig. 8.

consistencies. For instance, it is noted throughout that one part at least of the fixture shows a suspicion of a motive that, even if it were well executed, is at complete variance with the other parts, they in turn bearing little if any resemblance to one another.



Fig. 9.

Fig. 6, for example, is a piece entirely out of proportion at its inception; no amount of alteration in the component parts in respect to design could remedy it. It belongs to no style, to no period, unless one were to take the fact of its existence for *a priori* proof that it must be placed in the motley gallery apportioned to the vaudeville of genuine artistic effort.

To be more specific, Fig. 6 has a weak back. Atlas never in his weariest moments looked more burdened than this back piece looks, supporting as its meted in-

cubus the two immense bulbs that droop as if on the point of collapse. Even if the back were strong enough, the arms are not. In respect to the decorative effect there is again trouble: The back suggests, if it suggests anything, a French motive, while on the bulbs is a pattern that savors of the Greek of the Empire period. Of this "gilt and glitter," which only at its very best is endurable, one would surely tire, and its cost would undoubtedly be greater than a fixture that is much better from the standpoint of grace, beauty, proportion and essentially everything else that makes for good taste.

Fig. 7 offers as its most glaring fault a wreath, the excuse for whose existence would be hard to find. One can imagine the designer (or the assembler) of the fixture as being distressed at the hiatus between the chord of the arm and the "upper-cut" feature of the end beneath and, not wishing to give a prospective buyer the chance to feel that he was not getting a full return for his investment, inserted the wreath just because he happened to have it on hand.

Fig. 8 is a composition frequently seen in apartment houses, in parlors or dining-rooms, or almost any room where a general diffusion is attempted. While the illumination is effective, the piece offers such complete lack of motive and the movements are severely so feverish and hysterical that one cannot but wonder by what pressure the manufacturer was driven when he produced it.

Fig. 9 shows a tie which joins and supports the two arms, set in an inverted dinner-bell. The tie presents renaissance scrolls, the arms are plain drawn brass tubes, while the exact period of the dinner-bell receptacle is not known.

* * *

Abstract Rather that Concrete

"I don't want to do any advertising," growls the merchant when the solicitor approaches him.

"But I am sure you will soon see the advantage of having your name and firm mentioned in our paper," argues the solicitor. "Let me show you our last circulation statement, and—"

"Now, look here, young man! Can't you take no for an answer? First thing you know, I'll lose my temper, and—"

"If you do," suggested the courteous solicitor, "try our lost and found column. You're sure to get quick results."—Judge.

* * *

Wanted an Ad with His Subscription

An inquiry came into the office of a technial electrical paper, on a postal card, from a little fellow over in Flatbush, asking for a sample copy and the subscription price.

They looked him up and found that he made a line of specialties for the electrical trade, so an advertising solicitor went over to see him, thinking that perhaps there might be some advertising back of it.

He told the man his story, gave him a sample copy and told him the subscription price was $3.00 a year.

The man looked the paper all over, sized up the ads and came back at the solicitor with the questions, "How do you work this thing anyway? If I subscribe to the paper how big an ad do I get? I see some of the ads are small and some are large. What I want to know is, how big a one do I get with my subscription?"

Interior Decoration



The Biedermeier Style

Arranged by C. WALTER TOZER

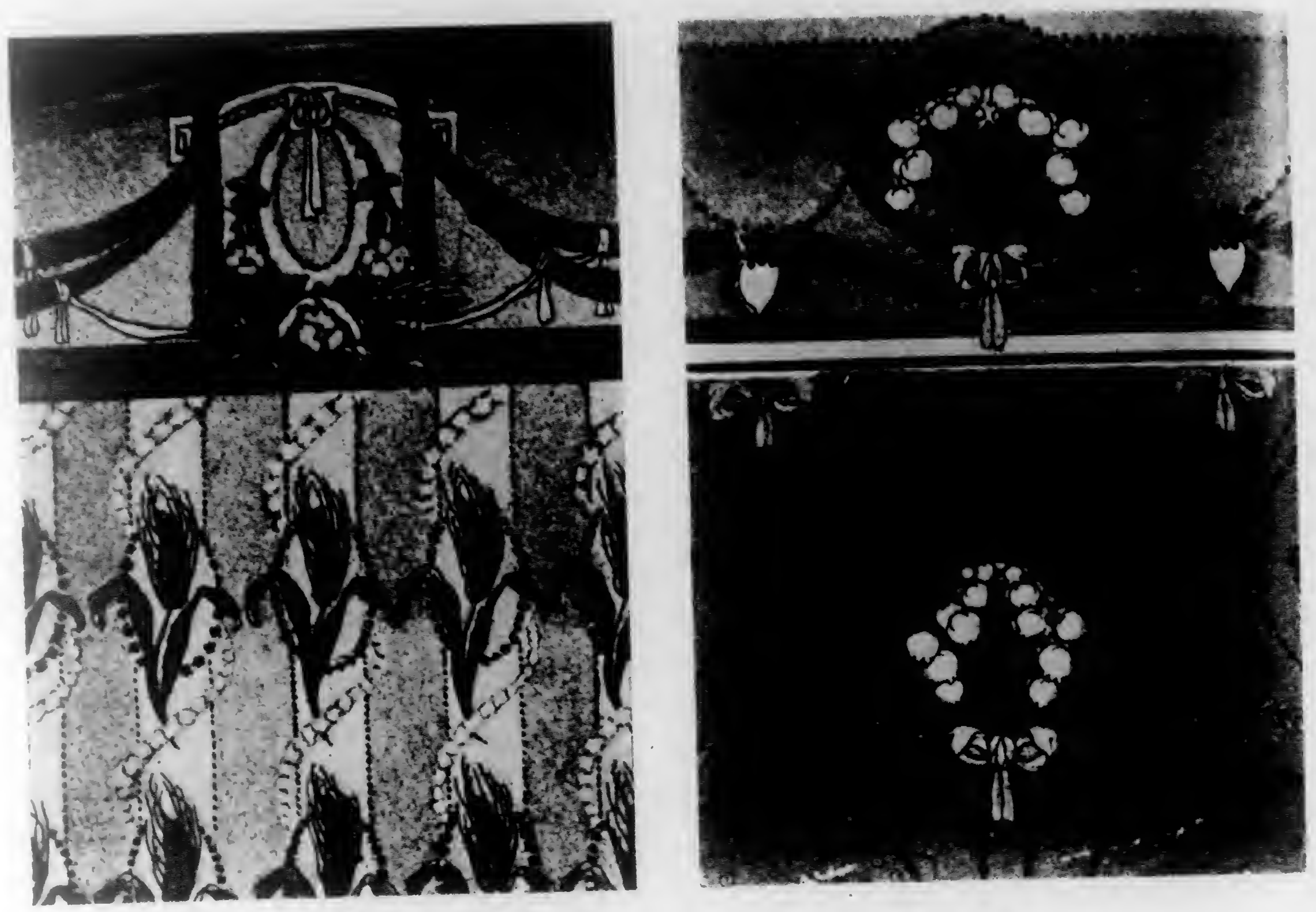
THIS is a style having great popularity in Europe and has already entered America. It derives its name from a character in a series of illustrations in a very sedate German comic paper of a few years ago. He was a middle class German citizen, with money and small taste. It is said of him that he very much desired the introduction of a new style in decoration and offered a large prize for the production of the "new style." He was a good citizen but very weak on art. In fact was the sort of man who would buy a collection of funeral urns, we'll say, and perch them upon the posts of his garden wall; then place a cast iron deer on his lawn, and endeavor to make his 50 x 100 yard a miniature imitation of the park of Versailles.

In America, at the present time, it is a "novelty", and in whatever line it may appear, it shows a desire to offer the "newest" thing rather than a necessity of supplying an insistent demand.

The Biedermeier style is just a "pretty" style, and in classifying it, as to spirit and feeling, it would be put in the same class as the Dresden china, the old Dolly Varden gowns, and such things as the old bisque figures of shepherdesses and the "poke" bonnets of olden days.

This is just what Biedermeier is. It doesn't pretend to have "meaning" nor to express the soul throbs of an ambitious artist. It is simply "pretty" and it is satisfied to be so. Surely it must be admitted that it is decidedly charming in its simple and unambitious way. It doesn't pretend to be much and it is all it pretends to be.

Whatever we may think of the Biedermeier style as a whole there is no question that in some of its phases it well fills for the moment the



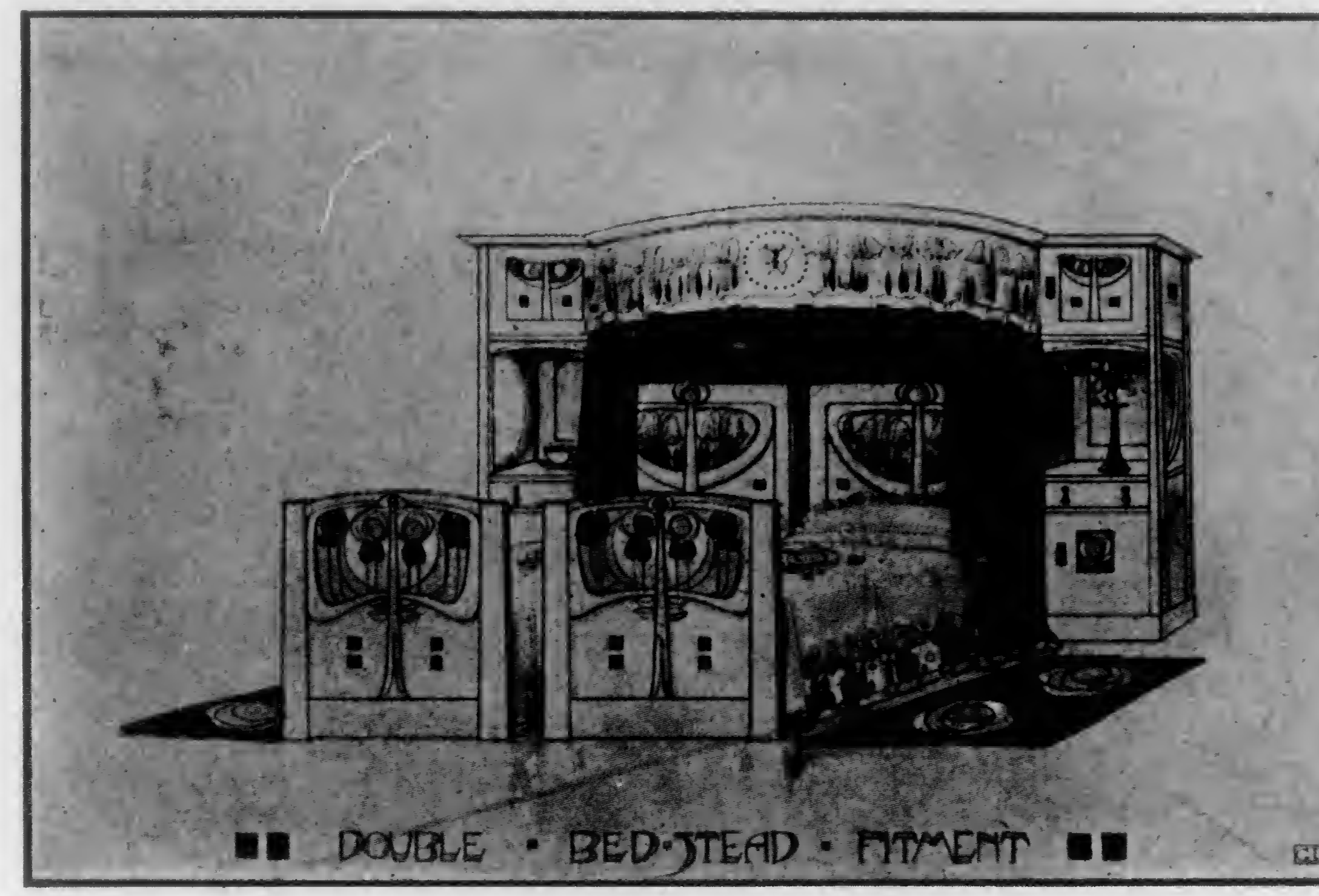
Biedermeier Border Designs. Colorings all in Soft Pastel Tones

desire for novelty that is constantly urging the designer to produce something new. It will never have a great vogue in this country as a complete room decoration, because it is not a complete style. It is not based on any great constructive idea, but is merely decoration, and decoration without any great artistic merit.

The Empire style was the last great period style in France. Germany had no styles but the French. England's decorative art rather thinned out with the Georgian. After the Empire every thing became ordinary and tame; there were no more "grand" styles, imperial or royal. Herr Biedermeier came into his own, waxed rich and opulent, retired and spent his money. Art was no longer aimed to hit the taste of kings or emperors; it was aimed to please the taste, or lack of taste, in Herr Biedermeier, and just as he made his little lawn a reduced and domesticated park of Versailles, so the designers created a reduced and domesticated Empire style to please him.

The Biedermeier style, in its present revival, appeals, not only because of its simple prettiness, but because it is in a way "old fashioned."

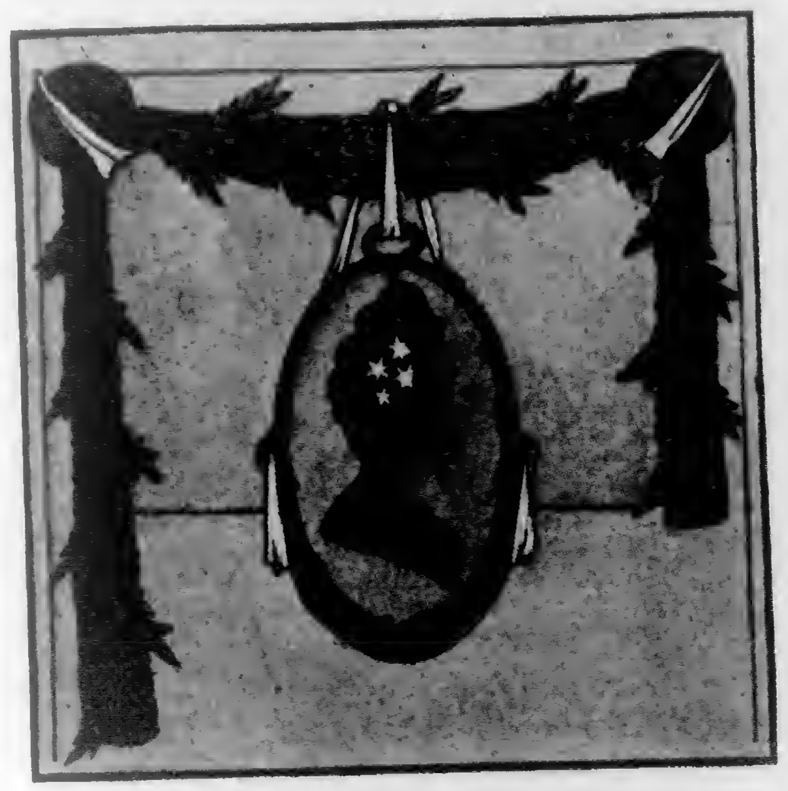
In design the new Biedermeir is freely treated. At its fullest it represented only a thinned down Empire style, and the Empire style itself was not a great style. It was merely a quasi-classic thrown together, as may be said, to fill the need of something new and showy enough for an imperial court, and conceived and carried out by men of no great originating genius. The Biedermeier is no more than based upon the classic styles that gave rise to the Empire, and the designer does much as he pleases so long as he keeps the designs gentle, sweet and mild. In color the new Biedermeier is also gentle. It avoids strong hues and violent contrasts; pastel tones are used, and the design is outlined and then filled in with flat color; no shading; no modeling. Only one strong note ever enters and that is solid black. In Biedermeier's day the silhouette portrait —a profile cut out of white paper and mounted on a black ground—was the crayon portrait of that day. It was conspicious in the room's fitments just as the cheap crayon portrait of today. The silhouette made a strong contrasting note in the soft pastel tones of the room. The Biedermeier style, while never joyous, was cheerful.



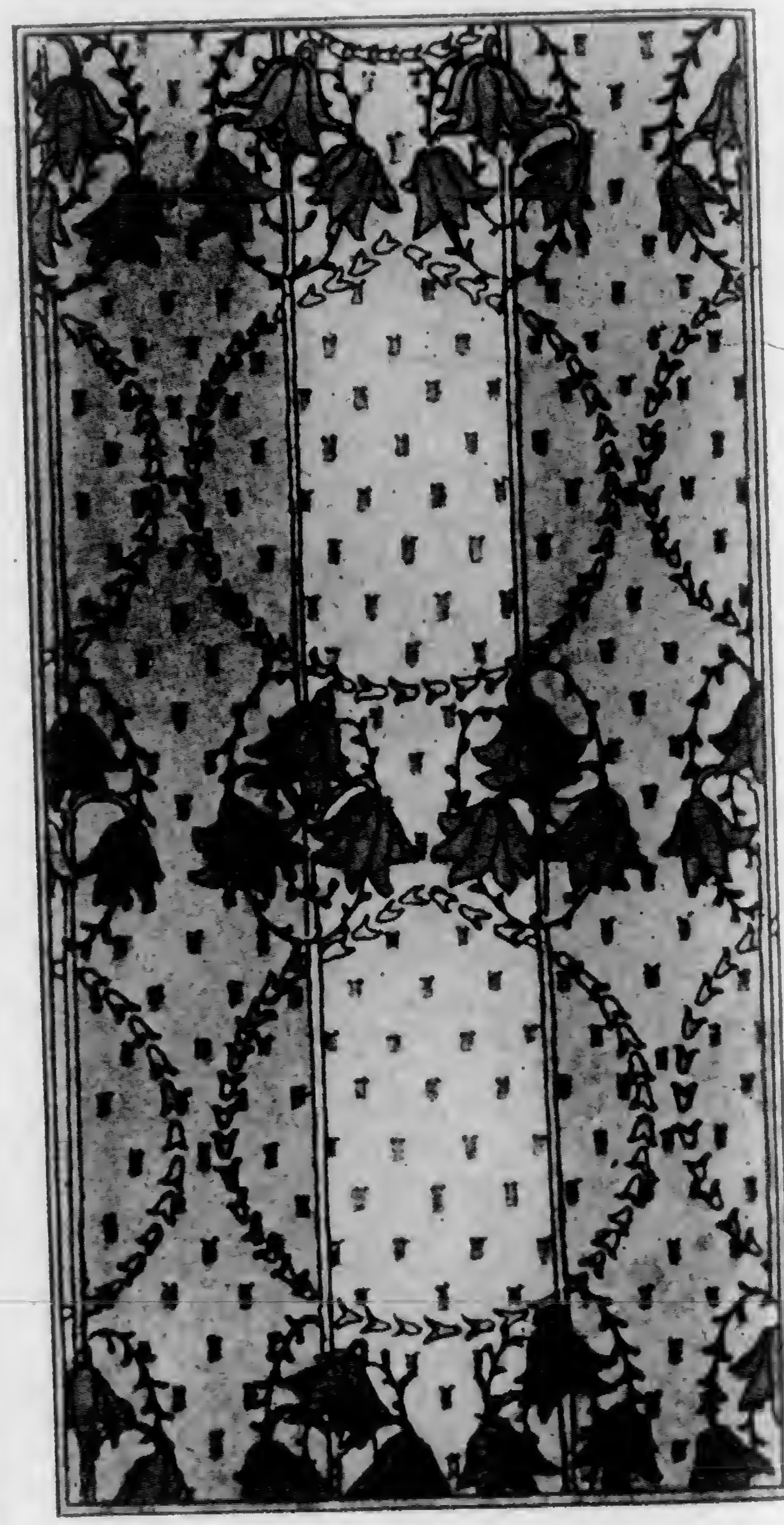
The average man does not care to live with decorations that he cannot understand, and to him the Biedermeier style is more satisfactory than l'art nouveau, or than the "grand" style of courts and palaces. Like Herr Biedermeier, he likes something "neat and refined, but not gaudy", and excellent as "high art" is, the population of the world is largely made up of "citizens".

The Biedermeier, as a whole, will not be very popular in America for the simple reason that it will be impossible to secure materials for the decoration of an entire room. We will never have Biedermeier furniture in this country, designed especially to be in harmony with the other fitments, because it would not pay the manufacturer. Individual examples of Biedermeier upholstery goods and curtains and wall papers we can now have from either importers or American factories, and they are very pretty, but they will remain, as they now are, to be used because they are admirable, and not because the decorator will use them to fit up entire rooms in perfectly harmonious Biedermeier period style.

The new wall paper lines show quite a number of Biedermeier patterns and no doubt that during the next few years strict floral designs will be replaced to a large degree by the conventionalized floral treatment as seen in this style. We are illustrating this article with a number of cuts showing this style in wall paper and furniture designs and also some characteristic details.



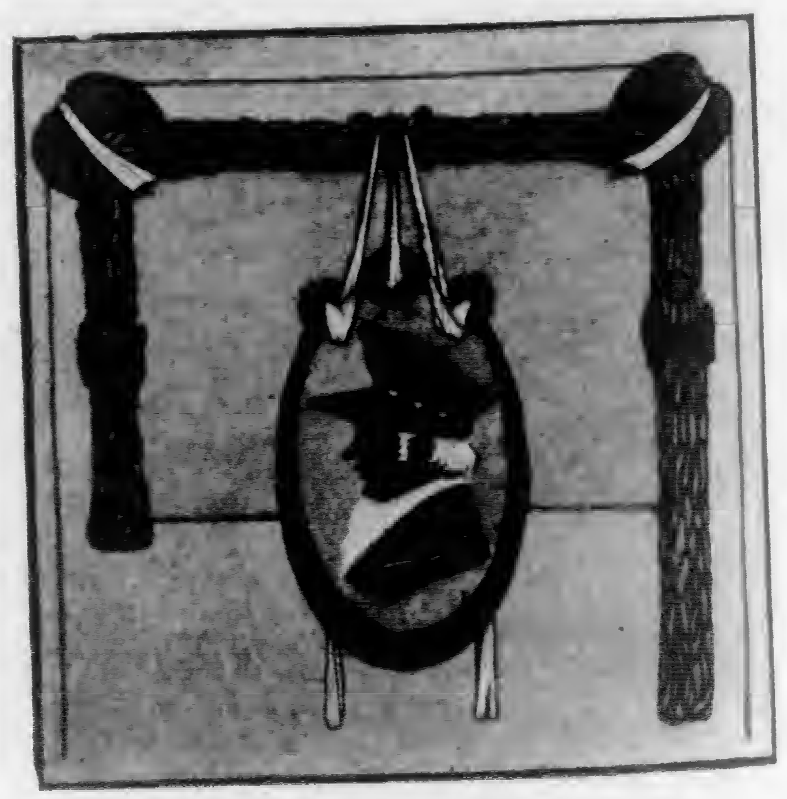
A Biedermeier Pillow Top



Biedermeier. Alternate White and Dull Rose Stripes Sky Blue Flowers. Wreaths and Dots in Black



Biedermeier. Center Stripe Cream. Side Stripes Gray. Medallions Gray. Roses Pink. Leaves Light Green



Another Biedermeier Pillow Top

Among the Architects

American Institute of Architects

(ORGANIZED 1857)

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*Executive Committee.

Next Convention at Chicago, Illinois

San Francisco Chapter of American Institute of Architects

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Vice-President	William Mooser
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Southern California Chapter.

Officers for 1907-1908.

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President	John P. Krempel
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Sacramento's New Hotel

Architect Charles F. Whittlesey of Los Angeles and San Francisco is at work on plans for a hotel to be erected in Sacramento by the Sacramento Hotel Committee. The plans call for a $500,000 building to be erected at the corner of Tenth and K Streets, with a facade of brown tile. It will be of reinforced concrete, fireproof construction. Features of the hotel will be a unique roof garden and an auditorium seating 400 persons. Alden Anderson is president of the company.

Tharp Succeeds Shea

The San Francisco Board of Public Works has appointed Newton Tharp city architect to succeed William D. Shea. His salary is to be $4000 a year which is calculated to save the city from $100,000 to $200,000 in fees that would have gone to Shea had his services been continued. Tharp will now prepare plans and act as superintendent of all new municipal buildings except the school houses already designed under Shea's supervision. For preparing the plans of these Shea will receive 5 per cent of the cost of the buildings but he will not draw any money for the supervision of the structures, that task going to the new incumbent, Mr. Tharp.

Architectural Club's Educational Classes

The San Francisco Architectural Club announces several educational classes which will be maintained during the fall and winter at the club rooms, 568 Golden Gate avenue. H. W. Seawell, professor of drawing at the University of California, has assumed charge of a class in life drawing and water-color rendering, the former class meeting every Tuesday evening and the latter every Saturday afternoon. A class in structural engineering has also been organized with Charles Derleth as instructor. Meetings are held every Thursday evening.

Two Chapters Elect Officers

Annual meetings of both the San Francisco and Los Angeles Chapters, American Institute of Architects, were held in October, banquets preceding the business meeting.

San Francisco Chapter elected the following officers: President, Albert Pissis; vice-president, William Mooser; secretary and treasurer, Sylvain Schnaittacher; trustees, Henry A. Schulze and William Curlett.

The new officers of Los Angeles Chapter are: President, Carroll H. Brown; vice-president, Myron Hunt; treasurer, August Wackerbarth; secretary, Fernand Parmentier.

Portland Club to Hold Exhibit

The recently organized Portland Architectural Club is arranging for an architectural exhibit to be held early in January. "To make this exhibit a success and to lay the foundation forfuture annual exhibits", says an exchange, "is demanding much time and effort on the part of the promotors of the idea, and it is but common courtesy that every architect in the whole northwestern territory should give the matter immediate consideration and if possible arrange to be represented there. Out of a successful exhibit at Portland should grow the establishment of a northwestern circuit or league, including the principal cities, where the works could be shown and every one interested given an opportunity to profit thereby. Furthermore, it may be expected that such an arrangement would attract the attention of eastern architects and exhibits held in the large centers of the east might be secured, in part or in whole, for the northwestern circuit."

Rejects Hollow Tile

The Los Angeles City Council has declined to amend the building ordinance by adding a provision permitting hollow tile blocks to be used for outer walls of buildings inside the fire limits.

At a recent meeting of the Southern California Chapter of the American Institute of Architects resolutions were adopted favoring the use of the material and asking the council to modify the building laws so as to permit the use of hollow tile blocks for walls of buildings not more than thirty feet in height.

Building Inspector Backus made a careful study of the uses and abuses of hollow tile blocks, and reported to the Council in substance as follows:

In my estimation it would be extremely unwise to allow the use of hollow tile blocks for exterior or interior weight-bearing walls within the fire limits, for the reason that it has been demonstrated that said tile is such an excellent non-conductor that the outer wall or shell of the tile will become red hot when subjected to an intense heat, while the interior wall of the tile is comparatively cool, the result is that the outer shell of tile (owing to expansion) will break away from the connecting web, after which a wall of such tile carrying any considerable load would collapse by buckling.

In the event of a fire in a building of ordinary construction, which might be located in close proximity to a structure built of hollow tile, there would be grave danger that the burning timbers falling against such a structure would penetrate the wall and thus set fire to the contents of said hollow tile building. Even an ordinary blow will fracture the tile in such a wall, and the backing of a heavy wagon against the building would be liable to cause quite a break, to say nothing of the opportunities offered to a mischievious boy or any one else armed with a heavy hammer, who could with very little effort break through the walls of such a structure.

As a result of this report the city authorities have declined to allow the proposed amendment.

Cement Users' Convention

The fourth annual convention of the National Association of Cement Users will open January 20, at 10 o'clock in the morning, and will close at 11 o'clock p. m., January 25, 1908, in the old Sixty-fifth Regiment Armory, Broadway and Potter Streets, Buffalo, N. Y.

Cement Sidewalks

La Grande, Oregon.

To the Editor: Will you kindly advise me as to the best method to pursue in putting a new top coat on a cement sidewalk.

J. L. MARS.

In reply to your inquiry we would suggest the following plan of procedure:

(1). Roughen the surface of the old concrete, making frequent small cavities in the surface and then thoroughly clean this surface.

(2). A cement grout should then be applied but not in the ordinary way of wetting the old concrete and sprinkling dry cement over. It should be a mixture of cement and water and thoroughly swept or mopped in, say with a broom.

(3). The top coat should then be laid and thoroughly troweled down. The operation of applying a top coat is frequently unsatisfactory, but by following the above instructions we believe you will get satisfactory results. [Ed.]

Comparative Cost of Materials in San Francisco, Chicago and New York

(Compiled by the California Promotion Committee.)

Materials.	San Francisco.
Common brick, per M	$ 8.75 to $10.00
Pressed brick	25.00 to 45.00
Cement, local	1.75 to 2.00
Cement, foreign	2.00 to 3.25
Sand, per load	1.00 to 1.50
Gravel, per load	1.40 to 3.50
Rock, per load	1.75 to 3.50
Lime, per barrel	90 to 1.10
Excavating, cubic yard	75 to 2.50
Steel, set up	58.00 to 95.00
Lumber	15.00 to 40.00

Materials.	Chicago.
Common brick, per M	$ 7.00 to $ 8.00
Pressed brick	21.00 to 32.00
Cement, local	2.00
Cement, foreign	3.00
Sand, per load	1.90
Gravel, per load	3.50
Rock, per load	3.50
Lime, per barrel	1.10
Excavating, cubic yard	2.50
Steel, set up	75.00
Lumber	40.00

Materials.	New York.
Common brick, per M	$ 7.00 to $10.50
Pressed brick	23.00 to 32.00
Cement, local	1.35 to 2.00
Cement, foreign	2.50
Sand, per load	1.80 to 2.00
Gravel, per load	3.50
Rock, per load	3.50 to 4.50
Lime, per barrel	90 to 1.10
Excavating, cubic yard	1.10 to 2.50
Steel, set up	58.00 to 75.00
Lumber	22.00 to 40.00

The following figures show the average wages paid in San Francisco and New York, Chicago wages being the same as New York:

Trade.	San Francisco.	New York.
Excavators	$2.50	$1.95
Concrete workers	4.00	2.80
Bricklayers	7.00	5.60
Carpenters	5.00	5.00
Plasterers	7.00	5.50
Electricians	5.00	4.00
Plumbers	6.00	5.00
Plumbers' helpers, per week	20.00	12.00
Painters	5.00	4.00
Hod carriers for brick	4.00	3.00
Hod carriers for plasterers	5.00	3.25
Cement finishers	6.00	4.40
Steamfitters	6.00	5.00
Steamfitters' helpers	3.00	3.00
Housesmiths	5.00	4.50
Marble setters	5.00	5.50
Marble setters' helpers	3.00	3.00
Bridgemen	5.00	4.50
Granite setters	5.50	5.50

Architect Albright and the San Diego School Board

Harrison Albright, a well-known specialist in reinforced concrete architecture in Southern California, threatens to sue the San Diego Board of Education for the full amount of his commission as architect of a proposed school building. It seems that at the written request of the board Mr. Albright submitted designs for a building and at a subsequent meeting was selected as the architect and received notification in writing to that effect. He then proceeded with the plans and submitted them to the board. On receipt of bids the board concluded they did not want a concrete building or Mr. Albright as architect. Unless the board retracts, a suit for damages and full commission will result. The Board of Education has sought the legal opinion of the District Attorney who has decided that the Board's action in selecting the plans of an architect without first advertising about what was desired in the way of plans, giving the cost of the building and the premium to be paid the architect for his services, was illegal and consequently the officials are not legally bound to pay Mr. Albright his commission. This is another strong argument against the much abused competition scheme as carried on by city and county officials and which architects are fast learning to keep out of until such time as they can be properly and fairly conducted.

Twelve-Story Office Building

Architect John Cotter Pelton of San Francisco has completed plans for Armaund Cailleau, for a twelve-story building to be erected on the corner of Grant Avenue and Sutter Street, San Francisco. The building is to be known as the Tower Building and will cost $150,000. The lot is 40x40 feet. The building will be Class A, and will be built of steel. The outside will be finished in white stone.

Group of Concrete Buildings

Rankin, Kellogg & Crane, architects, of Philadelphia, Pa., are preparing plans for a group of reinforced concrete buildings to be erected in San Francisco for the Transport Service of the Army Department. The buildings to be erected are six three-story storehouses, 60x200 feet each, a three-story and basement office building, 50x150 feet, a number of houses for officers, and a system of docks. The cost will be $1,250,000.

The National Association of Manufacturers of Sand-Lime Products will meet in annual convention in the German room of the Chittenden Hotel, Columbus, Ohio, Wednesday, Thursday and Friday, December 4th, 5th and 6th.

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OF CALIFORNIA

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Vol. XI. NOVEMBER, 1907 No. 1

LUMBER MEN AND INCREASED FREIGHT RATES

Keen interest is being taken, especially among the lumber men, in a proposed amendment to the Interstate Commerce law, the object of which is to prevent any sudden change in interstate freight rates without first giving the shipper an opportunity to be heard.

Under the present procedure, railroad companies simply file their tariffs, which become effective in thirty days. If the shippers feel aggrieved, they then appeal to the Interstate Commerce Commission and the Courts. In order to overcome this unfortunate condition an amendment to the present Interstate Commerce law is essential.

Reasonable railroad regulation is the imperative demand of the hour. The subject is occupying the best minds of the nation. Upon its satisfactory solution depends the permanent prosperity of every State in the Union. It would seem as if we were drifting either toward government ownership or an enlargement of the powers of the Interstate Commerce Commission in the matter of fixing and determining equitable rates of transportation.

Let Congress pass an amendment to the present Interstate Commerce Commission Act requiring all railroads to not only file their proposed freight tariffs with the Commission, but in addition must secure the consent of the Interstate Commerce Commission before the rates can become effective. In addition to filing any proposed change in their freight tariffs, the railroad companies should be compelled by law to advise the shippers tributary to their lines, say 60 or 90 days in advance, that an application would be made to the Interstate Commerce Commission asking for a hearing on the question of a change of rate.

If after a hearing and no valid objection was urged, the rate would become effective. If the Commission decided adversely to the application of the railroad, its right of appeal to the courts would still remain.

On the other hand, if the shippers felt aggrieved at the granting of the railroad's application to advance rates, the right of appeal to the courts would be safeguarded, but the rate in controversy would stay in effect until the courts had finally passed upon the appeal.

It is a reasonable presumption to assume that where a rate has been in effect for several years, it be fairly regarded as a renumerative rate to a railroad.

A shipper can accommodate himself to practically any rate, if the rate be a permanent one.

The need of some legislation along this line is brought forcibly to mind by the action of the railroad companies in increasing the Eastern rate on lumber 10 cents per 100 pounds, which is equivalent to about $3.30 per thousand feet.

This increase in freight rate which became effective November first, restricts the market for Pacific Coast lumber to a very marked extent, thereby reducing the enormous volume of money which has been placed in circulation through this one mighty industry alone.

FIRE RESISTANCE OF CONCRETE

A committee from the Royal Institution of British architects recently investigated the fireproof qualities of reinforced concrete and its report, which was adopted by the Institute, is so replete with gratifying conclusions, that we feel compelled to pay more than passing notice to the various points advanced. It may be taken as authoritative, declares the report, that the strongest concretes, from a fire-resisting point of view, are those in which coke-breeze, cinders, or slag form the aggregate, and that the covering over the metal reinforcement should be at least 1in. thick in floor slabs, and 1½in. thick in beams. Another important note as affecting designs is that which states that all angles should be rounded or splayed in order to prevent spalling off under heat, and that there shall be means of connection in the form of loose stirrups, bent-up rods, etc., between the metal in the lower sides of beams and slabs, which suffer most in case of injury, and the upper or compressional sides, which are not usually injured. Fortunately, this corresponds with what theory requires for the resistance of shearing stress.

Another highly commendable feature of the report is the insistence upon the requirements of specifications adopted by the British Engineering Standards Committee, both with regard to cement and steel; but it is, we think, rather a pity that inch-pound units should have been adopted throughout instead of foot-ton units, with which architects are more familiar.

PROSPECTS BRIGHT FOR THE FUTURE

The splendid victory of the good government forces in San Francisco is already being felt in a return of confidence on the part of the property owners and the money lender. The day following the election building permits representing an immediate outlay of more than $2,000,000 were issued. Since then, in spite of the temporary stringency in the money market, additional permits have been granted averaging several thousand dollars a day. Architects report that many jobs which were held in abeyance before election are now going ahead and it looks now as if the new year would see all previous records smashed in point of actual new construction work. And why not? San Francisco is the only city in the country not overbuilt. The construction work must come if the city is to hold its position as the great metropolis of the Pacific Coast. With money easier and confidence restored by the advent of an honest city administration, what's to hinder our advancement?

The Publisher's Corner

In New Quarters

Chubbuck and Harris, sales agents for lime, cement, plaster, metal lath, pressed brick, enameled brick, etc., have moved from the Atlas building to more commodious quarters in the building at the corner of Third and Mission streets. The number is 710 Mission street. The firm has the ground floor which is used as a sample and salesroom while immediately above this room and reached by a private staircase are the executive offices. It will be recalled that Chubbuck and Harris were one of the first firms to resume operations after the big fire, finding quarters in the then partly destroyed Atlas building. As a result of "getting in on the ground floor", to use a trite maxim, the firm has prospered—a fact that is apparent by its splendid new quarters.

A Successful Plumber

Probably no single plumbing concern in California has met with greater success than R. C. Smoot of San Mateo. The best work in San Mateo county, and there has been none better on the Coast, has gone to Smoot in competition with San Francisco and other concerns. The contracts have ranged in importance from $10,000 to $350,000. Following is a list of the buildings for which Mr. Smoot has done the plumbing, heating and sheet metal work, including, also, work now in progress: Peninsula Hotel, W. H. Crocker mansion, Smith's garage, Hickie garage, Lewis residence, Cotton residence, Turner residence, J. B. Cuthburt residence, San Mateo Polo Club house, Boldeman and Abrams residences, Mission office building and Brown office building, besides a dozen smaller residences costing from $3,000 to $6,000 each.

Fireproof Materials

The Western Fireproof Material Company is now located in Suite 15, No. 42 Market street. The company's old quarters were on Steuart street, San Francisco. This company handles such fireproof material as basalt rock, cement, steel and cement for finishing imitation sandstone.

A New Fireproof Warehouse

A Willkomm, the Pacific Coast agent for Toch Bros. of New York, the Asbestolith Manufacturing Company, and other Eastern houses dealing in fireproof building specialties, has built himself a warehouse on Tehama street, near Third, San Francisco, to store his stock of R. I. W. Damp-Resisting Paint, Asbestolith fireproof flooring, etc., and at the same time to show the public what he can do with his materials.

The warehouse is absolutely fireproof. It is built of Mr. Willkomm's Asbestos-Cement Lumber (sometimes called Durability Slate), which material is a great improvement over corrugated iron, being attractive in appearance, free from a tendency to rust or to spring leaks. The walls of the building are covered with the heavier grade of Asbestos-Cement, the kind used for wainscoting (3-16 inch thick), while the roofing slates are the lighter grade (1/8 inch thick). These shingles are applied French method, which is really the most economical way, allowing only the minimum of waste.

The windows are types of the Lupton Fireproof window, which has been approved by the National Board of Fire Underwriters, and of the Atkinson Tilting Window, a local device which is proving popular.

The office section of this warehouse is finished with a metal ceiling and wainscoting of attractive pattern (also representing another agency of Mr. Willkomm's). The outside noise is well deadened by Linofelt sound-deafener placed in the walls, and the floor is a sample of Asbestolith in various colors, showing buff, white, terra cotta and black.

"Of course it's fireproof. It's built entirely of my own materials. I practice what I preach by using them," that's what the owner says.

Fireproof warehouses are certainly needed in San Francisco, and the public that wishes to avoid the ugly corrugated iron buildings had better go to 149-151 Tehama street and look at the Willkomm warehouse.

Portable Industrial Railways

"Portable Industrial Railways," is the name of an exceedingly attractive new catalogue, or rather booklet, just issued by the Arthur Koppel Company. This concern, as is well known, is a firm believer in the liberal use of printer's ink and it attributes much of its marvelous success to judicious advertising. Catalogue No. 227, as it is called, is replete with interesting information about the company's goods and some handsome half-tone illustrations are shown of various jobs on which the Koppel gilt-edged system of transportation is used. The book contains twenty-four pages and the San Farncisco manager, whose office is in the Chronicle building, will be pleased to mail readers of this magazine a copy upon receipt of request.

Wax-lac—a Modern Wood Finish

Wax-lac is the name of a highly artistic and modern finish for furniture and interior woodwork. The name is a catchy one and easy for architects to remember when writing their specifications. It is made by the Detroit White Lead Works and is handled in San Francisco exclusively by the Pacific Paint and Varnish Company. This firm has acted as the Pacific Coast distributers for the Detroit White Lead Works and the Detroit Varnish Company for little more than a year and its success has been almost phenomenal.

The present salesrooms and display quarters at 549 Howard street, San Francisco, thought to be amply large when the company first began business, are now somewhat crowded on account of the increased business, and Manager Cunningham has wisely secured an option on larger quarters, not far from Market street, which will be occupied as soon as made ready for occupancy. The management has made friends in its dealings with the trade, its policy of filling orders promptly and being accommodating having brought the company many patrons.

Persons who care for artistic homes or office appointments will appreciate the beautiful effects that can be produced with Wax-lac. It does not raise the grain of the wood and it leaves no disagreeable odor. Wax-lac is intended for new work only. It produces almost equally artistic effects on all woods, hard or soft, that have an open grain. It produces, by one application, a handsome wax-like finish, staining the wood any desired shade at the same time.

Roger's Klenzer is also carried by the Pacific Paint Company. It is a chemically pure preparation from which a suds can be made that will clean anything from a dirty floor to fine lace curtains. As a saver of domestic drudgery it is said to be without an equal.

Among the residences painted by the firm of Rhyman & Love of Los Angeles, for Hunt & Eager, architects, are the Richard Lacy home, the William Lacy home and the house of William Burk in Berkeley Square, Los Angeles. The work turned out by this firm is of the very highest grade.

The executive offices of E. G. Judah, general representative in Southern California of the Paraffine Paint Co., have been removed to Rooms 516-517 Security building, Fifth and Spring streets, Los Angeles.

Keuffel & Esser Co's New Home in San Francisco

This well-known firm, manufacturers of and dealers in Surveying Instruments, Drawing Materials and Measuring Tapes, has re-established their San Francisco Branch, and now occupy their splendid new five-story building at 48 and 50 Second street, which has been designed and built for their exclusive use. Every convenience has been considered and as a result it may be truthfully said, they have, indeed, a model establishment. The building has been constructed with special regard to the needs of their business, and nothing has been left out that would assist in giving quick and satisfactory service to their patrons.

The salesrooms occupy the ground floor which is perfectly lighted, and where the great variety of their goods are displayed in attractive and especially designed wall and floor show cases, cabinets and racks, which afford a customer the opportunity of making his selections, with the greatest satisfaction, as a comparison may readily be made of the different styles and qualities of any particular class of goods. A special feature is the sheet paper cabinet which is arranged so as to contain each size and style of paper in a separate compartment, giving a view and easy access to each, without reference to the usual small sample book which is most unsatisfactory to the purchaser.

There are separate wall bins for each kind and width of roll, drawing, detail, tracing, cross section and profile papers, tracing cloths, etc., so arranged as to be readily selected and measured automatically on a table which is provided at one end with an automatic measuring device, and a cradle constructed of rollers with ball bearings, and so arranged that the salesman merely has to place the full roll upon the cradle and roll as much as he desires. This assures the customer a perfectly clean and correctly measured length of paper, without any unnecessary delay.

The general and private offices are at the rear of the store floor, where a perfect system of the records of the business is kept, enabling ready and accurate reference of the smallest detail, which is quite necessary when one considers

the thousands of articles which are carried in their stock.

In the basement which is thoroughly damp-proof there are located the order and shipping department and the reserve stock rooms.

The second floor is used as a display and salesroom for the more bulky and heavy articles, such as drawing tables, drawing boards, trestles, cabinets, print frames, etc.

The third floor is used for all incoming goods as they are received from their factories at Hoboken, N. J., where they are unpacked and distributed to the various departments.

On the fourth floor is the chemical laboratory, and paper coating machines where great quantities of blue print paper are sensitized, which in turn are shipped to all points on the Pacific slope and the Orient.

On this floor they have their repair department which is most complete, and which enables them to make all repairs without having to send this class of work to their factory.

On the top or fifth floor is the blue printing department—a feature of the establishment in which the management deservedly takes considerable pride. The plant is equipped with two federal continuous printing electric print machines of the latest models, one vertical cylindrical, electrical print frame, vacuum and sun frames, chemical and water baths, and a model dry room, besides all electrical apparatus for use in producing all kinds of blue, brown and cloth prints within the shortest space of time. Just seven minutes is the record time that it took the other day to make a print, 54 x 96 inches, for a customer who was in a hurry, from the time he brought in his tracing until the blue print was finished and returned to him complete.

Throughout the entire building is a telephone system connecting all departments, and besides the regular passenger and freight elevators, there is a dumb waiter or small elevator, which connects with all floors, for conveying stock, etc., from one department to the other.

Artistic Stone Mantels

The Pacific Coast Art Mantel Company of which J. E. Manetta, the well known San Francisco modeler and Mr. Callahan, who is now associated with Mr. Manetta, are members, has established attractive offices and show rooms at 344 Tenth street, San Francisco. The company makes a speciality of artificial stone mantels for hotels, apartment houses and residences. Among the buildings equipped with mantels is the new apartment house on Pacific avenue, near Webster street, designed by Architect E. J. Vogel; the Cosmos club at Sutter and Octavia streets and a number of palatial residences.



Howe Scale Company

The Howe Scale Company of San Francisco announces its removal from 1690 Market street, where it has been since the fire, to more commodious and centrally located quarters at 143 and 149 Main street, which thoroughfare is again becoming popular as a commercial and wholesale center. In addition to a complete line of scales the company is agent for the Hall's Safe Co., Fiske's fancy iron stable stalls and stable fixtures, as well as a full line of Fiske's copper weather vanes.

Meyers & Ward Were the Architects

The two handsome interiors shown in the October Architect and Engineer were of the Pacific avenue residence of Mr. Fleischacher, Meyers & Ward, architects. The interior decorations were planned by the architects and carried out by A. W. Reiber, who, at that time, represented the Jno. Breuner Company.

Appointed Sale's Agents

The well known San Francisco firm of Gilhuly and Ambler has recently been appointed the exclusive sale's agents of the following concerns: A. E. Shorthill Company, Marshalltown, Iowa, Morava Construction Company, Chicago, Ill., and the Buffalo Steel Company of Tonawanda, N. Y.

Oakland Material Men Organize

The Material Association of Alameda county has reorganized for the winter's work by the election of J. P. Gelinas of the Remillard Brick Company as president and John L. Howard, Jr., of the Western Fuel Company as secretary. The association intends to bring into its membership, which now numbers fifty of the largest firms in Oakland, all the contracting building firms except the lumber dealers. It is the purpose of the association to protect itself in business matters by determining the reliability of its members. Intent to regulate or control prices is denied.

An Index to the Advertisements

New Advertisers Not Noted Here Will Be Classified Next Month

San Francisco Municipal Building

Building Superintendent Barnett of San Francisco has submitted a report on the condition of municipal buildings, in which he said that it would be a waste of money to rehabilitate the City Hall on the old lines, as it would cost more than would be required to erect a Class A building of seven stories to accommodate the civil courts and city offices. The report continues:

"The dome of the City Hall should be repaired and the main entrance beneath the dome should be the main entrance to the new building.

"The Hall of Justice was badly wrecked, but in my opinion is not a total loss and it can be restored. The Supervisors are trying to acquire land to enlarge the site and when that is done plans will be prepared and the building reconstructed.

"The City Hospital and Almshouse will no doubt be torn down and the county jails are very much in need of repairs. Many of the old engine houses need repairing and will be put in sanitary condition with available funds."

At the meeting of the Supervisors' building committee, Barnett was directed to secure bids for the removal of the southwest wing of the City Hall, formerly occupied by the Board of Works, Fire Commission, City Engineer and Judges of the Superior Court.

Death of Pioneer Founder

Leopold Frauneder, a pioneer iron founder of the Pacific Coast, died suddenly at his home in Oakland, October 28th, of apoplexy. Thirty years ago he established the Frauneder Ornamental Iron works in Oakland which later became the White-Frauneder Works until about two years ago when the old name was again resumed, the Whites establishing an independent company. Some time ago Mr. Frauneder retired from active business in favor of his son, Cornelius Frauneder, who is the present very capable head of the works.

Woods & Huddart Move

The well-known San Francisco firm of Woods & Huddart, dealers in iron and steel, have moved from 11 Front street to 356 Market street, corner of Front, the same location they occupied before the big fire. The firm have a fine suite of offices where they will be pleased to see their many old clients and as many more new ones. Woods & Huddart, as is well known, are extensive handlers of structural steel fabricated and they also carry in stock a big assortment of steel bars—round, square and twisted—for concrete reinforcement.

Western Pacific Awards Big Contract

The Western Pacific has just shown great vigor in its fight for a portion of Harriman's transcontinental business. The former corporation is making immense preparations across San Francisco bay and northward, paralleling the tracks of the Southern Pacific into the rich territory along the Berkeley and Contra Costa shores, and also on the San Francisco side. The Western Pacific has just awarded a contract to the Western States Construction Company for the railroad company's terminals in San Francisco, the total cost being over $4,000,000.

This is one of the largest railway contracts ever let on the Pacific Coast—in all its railroad-building history. The contract let for work on the San Francisco side of the Bay will give to the city much of the advantage that has heretofore been secured by Utah, Nevada, and Northern California, where, until now, building operations of the Western Pacific have been confined.

According to the terms of the big contracts just let, work must be commenced within fifteen days. Much of the time consumed in finishing the contract in San Francisco will be devoted to the difficult engineering feat of constructing a 1600-foot tunnel.

The Gould people have been securing a great deal of land in the vicinity of San Francisco and declare that their freight yards and slips will be large enough to accomodate all of the traffic that will be offered the company for years to come, and as convenient as the yards of the Southern Pacific or Santa Fe.

At present there are more than 8000 men employed by the Western Pacific on its road, and more are being added to that number all the time. Subcontractors are arriving every day at Winnemucca and Boca to begin work on their contracts on the line across the "Sagebrush State."

Cement for San Jose Schools

The Henry Cowell Lime and Cement Company has taken the contract for supplying all the Portland cement for the seven new school houses in San Jose. All the buildings are to have concrete foundations and cement exteriors.

Thanks to Sunset Magazine

We are indebted to Sunset Magazine for the excellent half tone illustration of the new First National Bank building, which forms the frontispiece in this number of the Architect and Engineer.

LITTLE GIANT
TRADE MARK

PHONE
MARKET
2109

FUEL OIL BURNERS

IMPROVED LITTLE GIANT OIL BURNERS

HIGH and LOW PRESSURE OIL PLANTS INSTALLED

Plants in course of construction

Sherman Clay Building
Alexander Hotel
Harshall Building
Spreckels Building
Blanco Restaurant
Pacific Cereal Co.
Bay Development Co.
Mission Hotel
Wells Fargo Building
Hotel Brilliant
First Nat. Bank, Berkeley
Oakland Bank of Savings
Peoples' Water Co., Oakland

References

Southern Pacific R. R.
Santa Fe R. R.
North Shore R. R.
Key Route
Cal. North-Western R. R.
Cal. Fruit Can. Assn.
Cal. Wine Association
Risdon Iron Works
Fulton Iron Works
John Sutton Company
Wilson Company
St. Francis Hotel
Fairmont Hotel

G. E. WITT CO., INC

1165 HOWARD STREET SAN FRANCISCO, CAL.

CATALOG ON APPLICATION

Keystone Boiler Works

MAIN AND FOLSOM STREETS

SAN FRANCISCO

PACIFIC COAST AGENTS FOR THE

PARKER WATER TUBE BOILER

SELF CLEANING ABSOLUTE SAFETY GREATEST ECONOMY

WRITE FOR CATALOGUE



TIFFANY DESIGN

Meurer's Metal Spanish Tile

See that Bold Square Nose casting a heavy shadow, made with our Patented High Wall Side Lock. Can never leak. Used in all the Schools in SAN JOSE.

MEURER BROS. CO.

Builders' Exchange Bldg., 185 Stevenson, Room 233

SAN FRANCISCO

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LINDGREN = HICKS COMPANY

General Contractors

BUILDERS OF THE

HUMBOLDT SAVINGS BANK BUILDING

CALIFORNIA { ORGANIZATION
EXPERIENCE
RESULTS

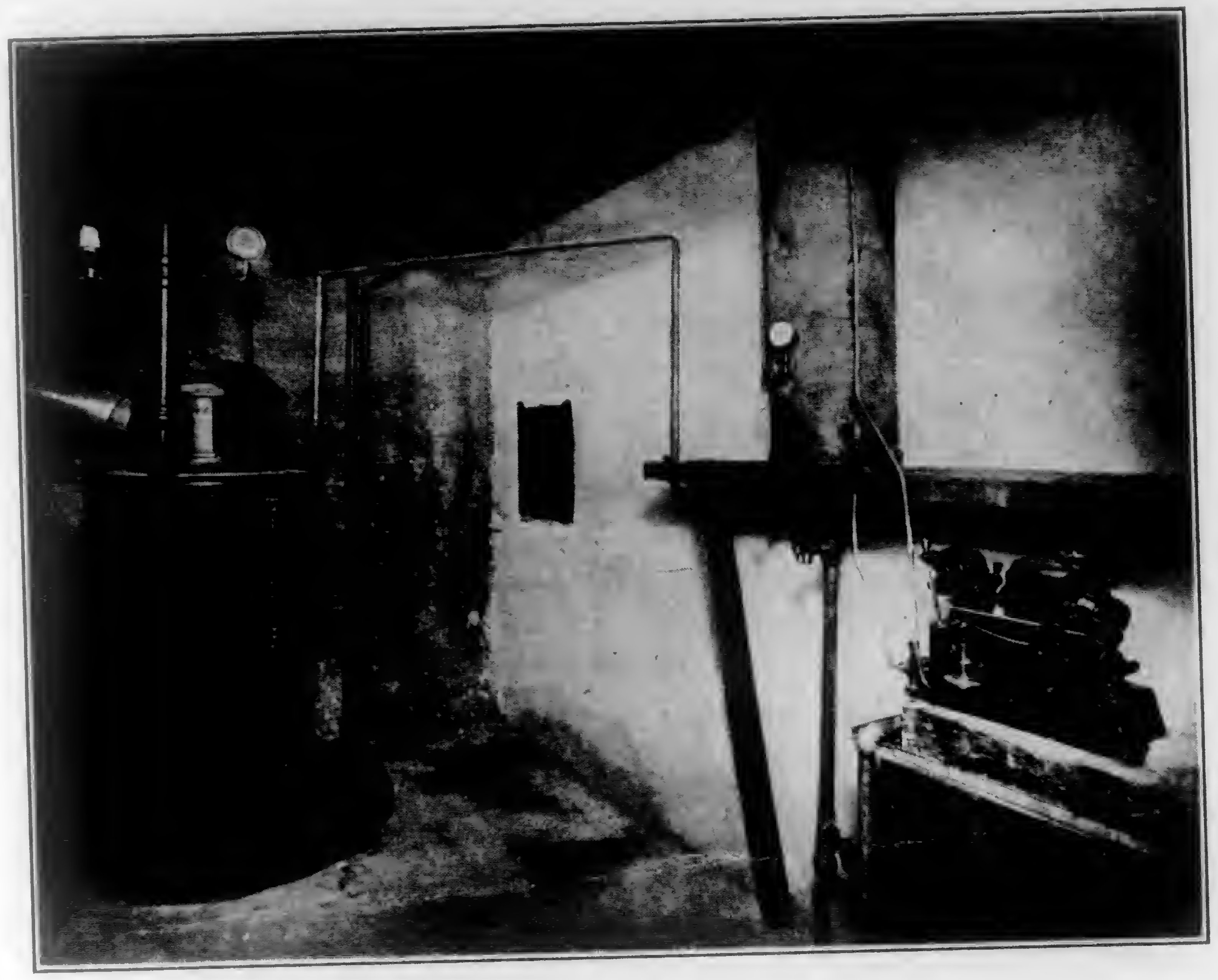
We refer by permission to

THE MECHANICS' SAVINGS BANK
CROCKER NATIONAL BANK
HUMBOLDT SAVINGS BANK

OFFICES:

HUMBOLDT SAVINGS BANK BUILDING

SAN FRANCISCO, CAL.



Dunn Oil Burning Plant in the Marsdon Building

Oil Burning Plants in Demand

The Dunn Petroleum Burner Company reports business exceptionally good. A number of large orders have lately been filled by the company and reports from those who have had the water heaters installed are highly encouraging. The company specializes in oil burning devices for hotels, hospitals, restaurants, bakeries, apartment houses, office buildings, private residences and power plants. A plant has lately been installed in the St. Winifred sanitarium, also the Commercial block on California street, the Morris Brown building, on Sutter street, and buildings for the United States government at the Presidio.

The photograph shown herewith is of an oil burning plant installed some time ago in the Marsdon building and which has more than paid for itself in the saving of fuel since being placed in operation. The plant consists of an electric pump that lifts the oil from

a storage tank to a small feed tank which automatically supplies the fuel for an oil burning heater. This little heater is capable of giving sufficient steam to heat 1200 radiators in twenty minutes time. The oil tank which has a capacity of 1500 gallons, the piping, electric pump, heater and all connections can be installed complete for $1500 which is considered remarkably reasonable. A contract has just been taken by Mr. Dunn to install in the new Builders' Exchange building a plant similar to that in the Marsdon building, this, too, after a contract had been let for installing an American heater which system will now give way to the oil burning plant.

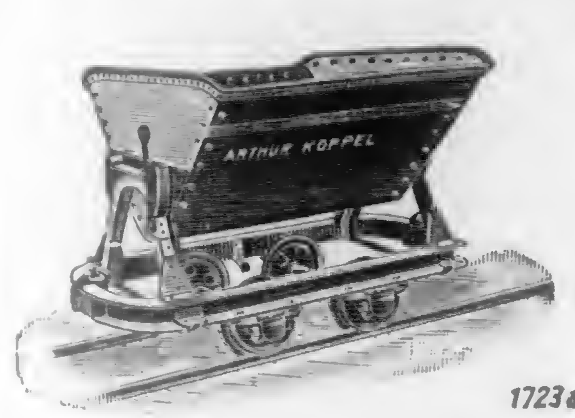
Mr. Dunn hopes to install a number of plants in the several new engine houses in San Francisco and vicinity. It is claimed that the municipal authorities would save hundreds of dollars a year if they would adopt the Dunn petroleum system which can be used to heat the boilers in the fire engines as well as the buildino itself or for either purpose separately at no additional cost.

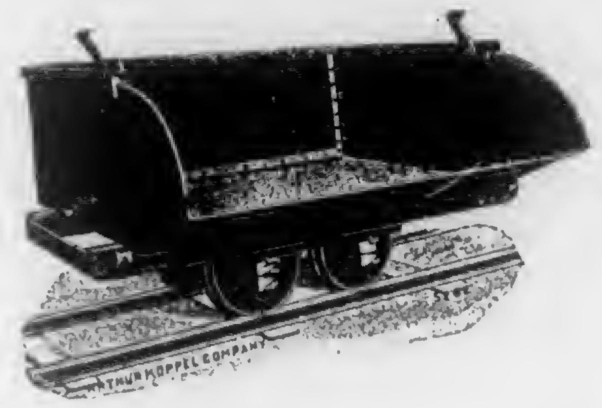
Medusa Water-Proof Compound

The Building Material Co., Inc., Monadnock building, San Francisco, reports recent orders for Medusa for the following constructions: Williams building, San Francisco; new County Court House, Santa Rosa, California; Delger building, San Francisco; Zellerbach building, San Francisco; Pond building, San Francisco; San Pedro, Los Angeles and Salt Lake Railroad Co., Lynn, Utah; concrete tanks of Lachman & Jacobi, Petaluma, California; Drexler building, San Francisco; Humboldt Savings Bank building, San Francisco; Woodward Investment Company's building, San Francisco; Michaels & Watt building, San Francisco, and Western Gypsum Co's Plant,. Reno, Nevada.

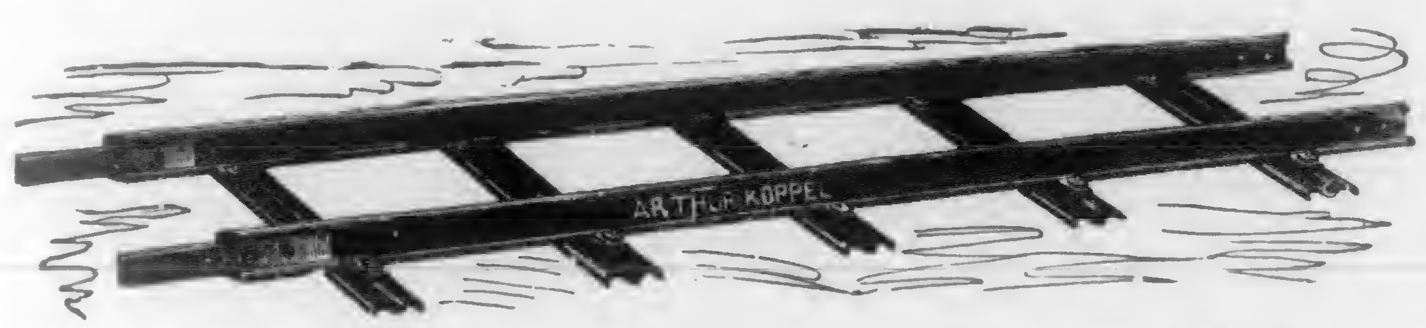
The Koppel System

MEANS THAT PROGRESSIVE CONTRACTORS USING THESE MODERN LABOR SAVING DEVICES CAN MAKE MONEY ON CONTRACTS AT PRICES BELOW COMPETITORS' FIRST COST

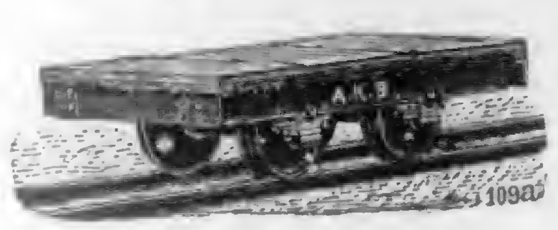




Contractors, Brick and Cement Manufacturers, Stone Quarries or any engaged in construction work who employ Wheelbarrows, Scrapers or Carts, can materially increase their profits by using the Koppel Portable Track and Equipment.



KOPPEL PORTABLE RAILWAYS



have been in constant use all over the world for the past 35 years.

For Cement Works, Concrete Construction, Factories, Quarries, Brickyards, Etc.

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1509-1511 CHRONICLE BUILDING

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NEW YORK—66-68 Broad Street
BOSTON—53 Oliver Street
PITTSBURG—McChesney Building
CHICAGO—1639 Monadnock Building

ASK FOR CATALOGUE No. 227

Building Fees Abolished

The Cleveland's (Ohio) City Council has repealed all provisions in the new building code relating to the issue of permits to build.

It seems that Mayor Johnson and his followers argued that it was a special tax upon a person proposing to build, and was a hindrance to the development of the city. Others claimed that the building fee covered the case of a "careful inspection of buildings while in progress, giving to the owner value received, and affording protection to him against inferior work and the violation of building ordinances." This latter supposition is a humbug. The building inspector may examine the drawings and specifications of a proposed building, only that and nothing more. It is the architect's place, and he alone can see that the building is constructed in accordance with the drawings and specifications and the contract. If any thing explicitly flagrant is going on, it is possible that the attention of the building inspector may be called to it, but that is the limit of his oversight. Men should know better than to suppose that a permit costing from $10 to $50 insures the superintendency of his work.

Van Wagner Bros.

Plastering, Brick, Stone and Cement Work. Cement Contractors of New Casino and Bathing Pavilion, Santa Cruz.

Work Done in Any Section of California

Address:

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Phone Oakland 1108

S. F. Phone PARK 11

BUILDERS' EXCHANGE 226 Oak St., San Francisco.

The J. Llewellyn Company

Successor to G. W. CLARKE CO., of S. F.

1325 BROADWAY, Oakland, Cal.

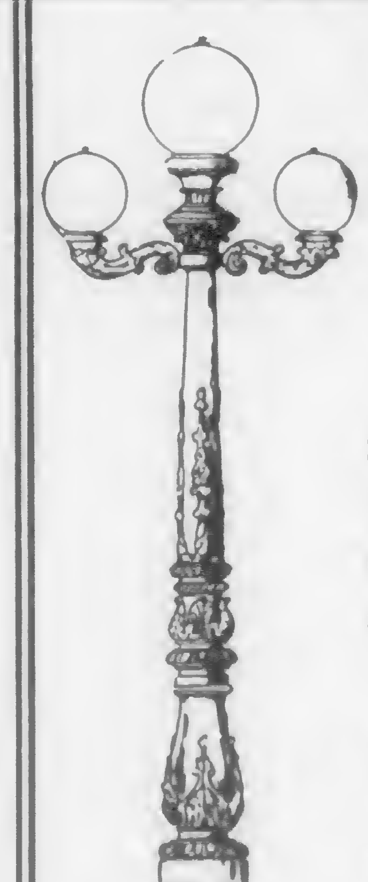
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Foreign and Domestic

WALL PAPER

PAINTERS AND DECORATORS
WOOD FINISHING
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ART GLASS DECORATIONS

ORNAMENTAL



Street Lights

Streets of Oakland, San Francisco and Berkeley are the best evidence of the character of my work.

Electroliers for Streets and Buildings.

Estimates furnished.

H. A. SMITH

409-411 Fourth Street

Oakland, Cal.

Builders' Exchanges in New Quarters

The Builders' Exchanges of San Francisco and Oakland have moved into new quarters, the San Francisco Exchange having taken possession of its own building on Stevenson street, not far from the site of the old quarters before the fire. The new building is large, light and airy and is a vast improvement over the temporary shack used immediately after the earthquake. A number of offices on the upper floors have been rented by various San Francisco material men.

The new Oakland quarters are in the Remillard building on Eighteenth street, part of the ground floor having been leased for the convenience of the 300 or more enthusiastic members.

Will Stand Sponsor

The Van Emon Elevator Company desires to announce to the public and members of the profession that if an owner or architect should require a sponsor of equal financial magnitude to other elevator companies it can assure him that it has a written agreement with the great Westinghouse Electric and Manufacturing Company of Pittsburg, Pa., to furnish the Van Emon Elevator Company with the Westinghouse electro-magnetic elevator car control and protect it and its customers against all suits any other company may institute.

POSITION WANTED—An experienced architect of designing and artistic ability, with general practice, especially in public buildings, desires to associate himself with a practicing architect in a large and progressive city. The Pacific Coast preferred. Address "Architect," care of this journal.

2 FINE FAST DAILY TRAINS

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AND

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SUNSET ROUTE

Dining and parlor observation car service Library and cafe — Drawing room sleepers to New Orleans without change — Personally conducted tourist excursion parties to St. Louis, Cincinnati, Chicago and Washington. ¶Connections made at New Orleans with trains for the North and East or Southern Pacific's largest new coastwise steamers for New York — Steamer trip adds no more to cost than for an all rail ticket. Ask Agents

SOUTHERN PACIFIC





THE NEW SAN JOSE HIGH SCHOOL
F. S. ALLEN, Architect

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Heating and Ventilating Engineers

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CONCRETE MIXERS

IF YOU WANT THE BEST GET THE

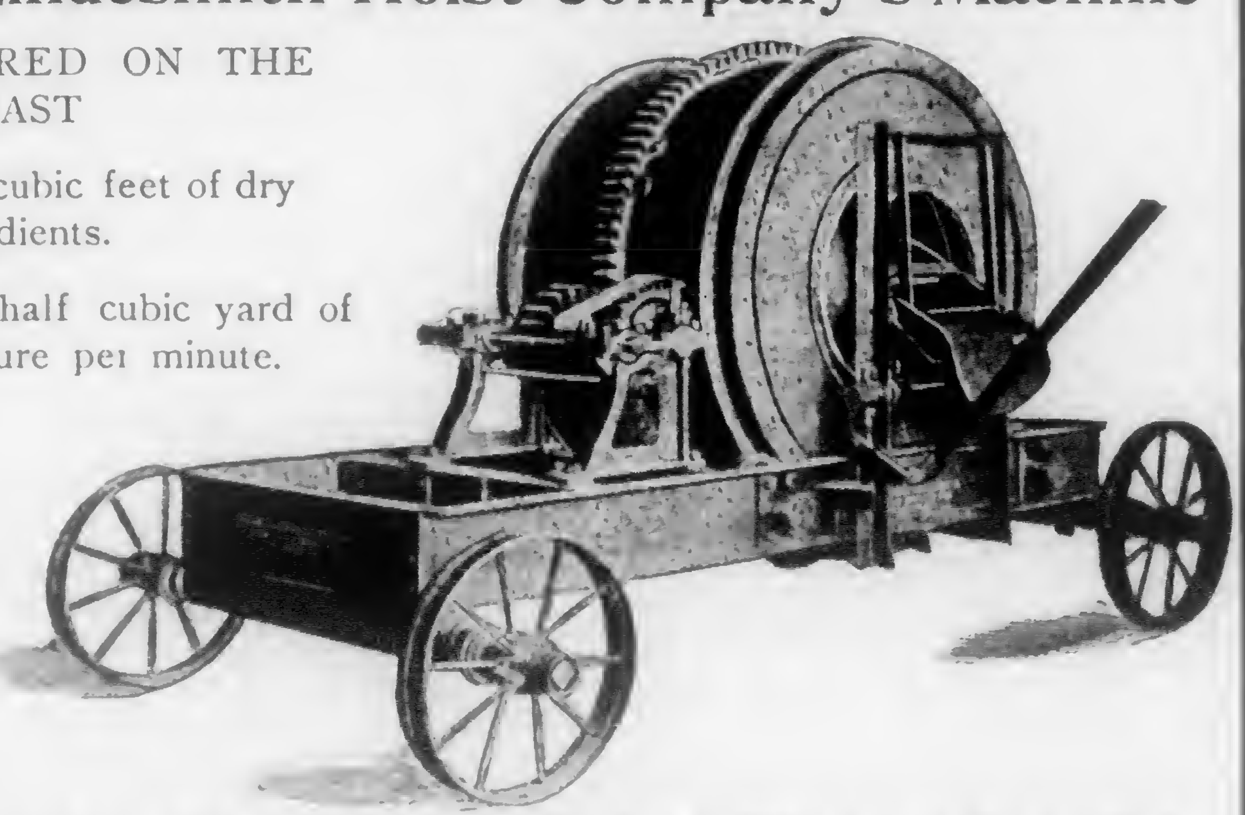
Wallace-Lindesmith Hoist Company's Machine

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Capacity 16½ cubic feet of dry ingredients.

Will deliver one-half cubic yard of concrete mixture per minute.

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THIS BIG PLANT NOW BEING ENLARGED TO KEEP PACE WITH ORDERS

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California Brick and Clay Manufacturing Co.

TELEPHONE TEMPORARY 3097 — 223 Monadnock Bldg., SAN FRANCISCO

GOOD STREETS MAKE ATTRACTIVE CITIES.

STREET PAVING OUR SPECIALTY

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We are also prepared to build Cement Block Houses Anywhere in the State; as well as Reinforced Concrete Buildings. Thorough Workmanship. Prices Right. Let us Figure.

Office, Forsythe Block, - - Fresno, Cal.

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IMPROVED CLIMAX SOLAR HEATER

ABSOLUTELY RELIABLE

WHY let the sunshine go to waste, and your money too, when at trifling expense you can put in your home an IMPROVED CLIMAX SOLAR HEATER that will furnish hot water from sunshine alone—winter and summer—for your bath, laundry, and all domestic purposes, without cost, damage or delay?

It can be connected with the range, furnace or gas heater to insure hot water on rainy days, and when so connected saves the expense of a kitchen boiler.

It insures a cool house during the hot season. Let us figure with you on your hot-water problem.

SOLAR HEATER COMPANY

342 New High St. - - - - - LOS ANGELES



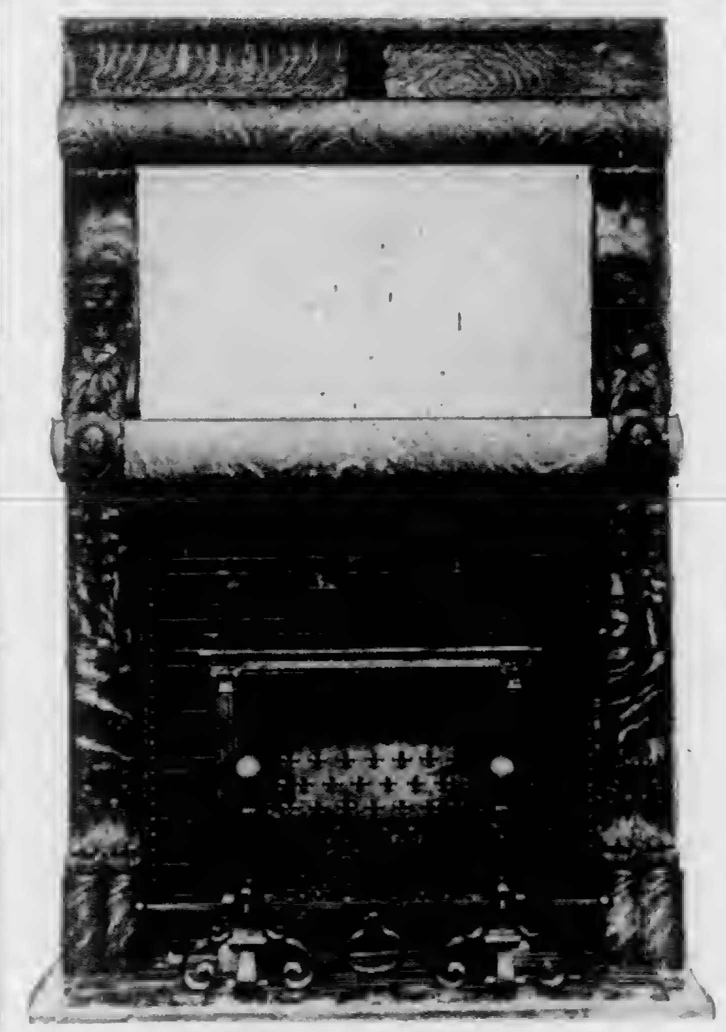
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For Hotels
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ELECTRICAL SUPPLIES OF EVERY DESCRIPTION

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MR. ARCHITECT

We want to assure you once more that you need not hesitate about specifying MEXICAN ONYX for any of your fine buildings, as we can supply it promptly and in practically any size, through any first class marble manufacturer in the country.

If you want to produce the most beautiful effect that is possible in stone, our Mexican Onyx is what you want. It is as far ahead of other marbles as the diamond is more beautiful than the moonstone. Let us submit samples and price. Write us or any of our agents.

SALMONS-ERNSTING COMPANY,

General Agents for

New Pedrara Mexican Onyx Co.

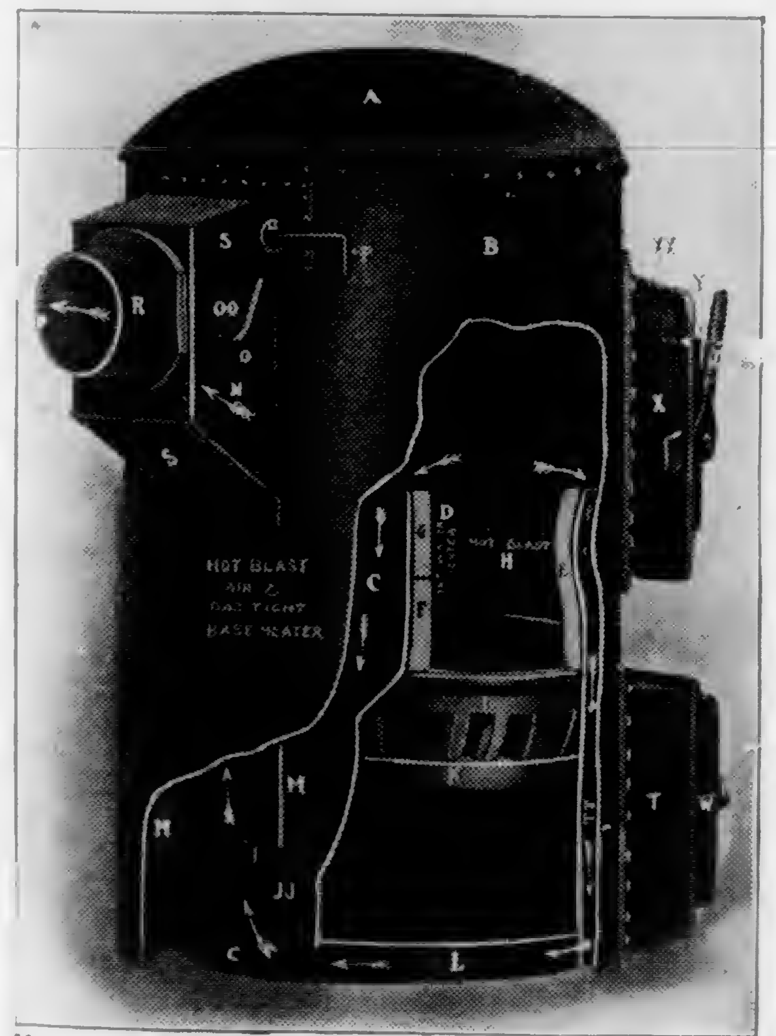
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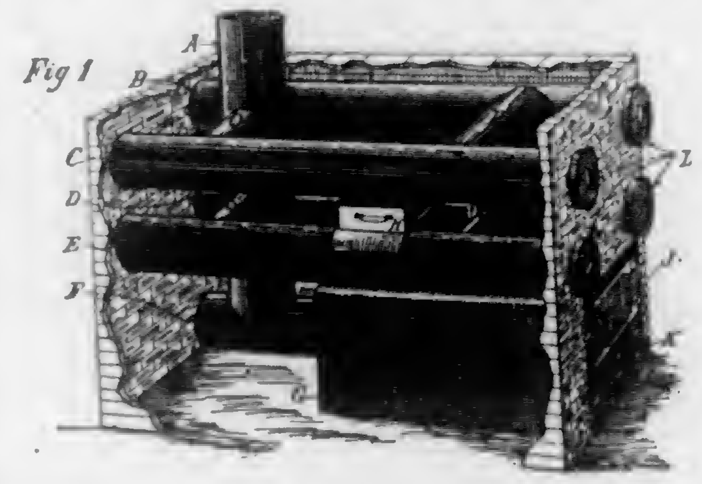
N. W. Cor. 13th and Mission Sts., San Francisco

HEATING AND VENTILATING ENGINEERS AND CONTRACTORS

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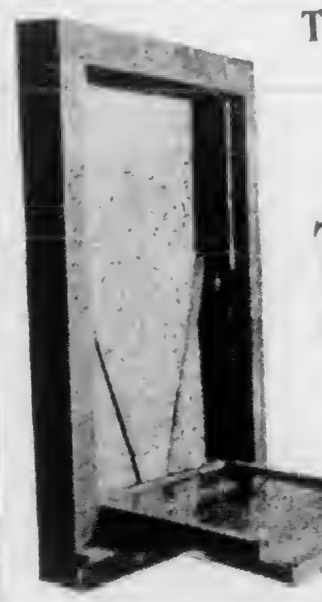
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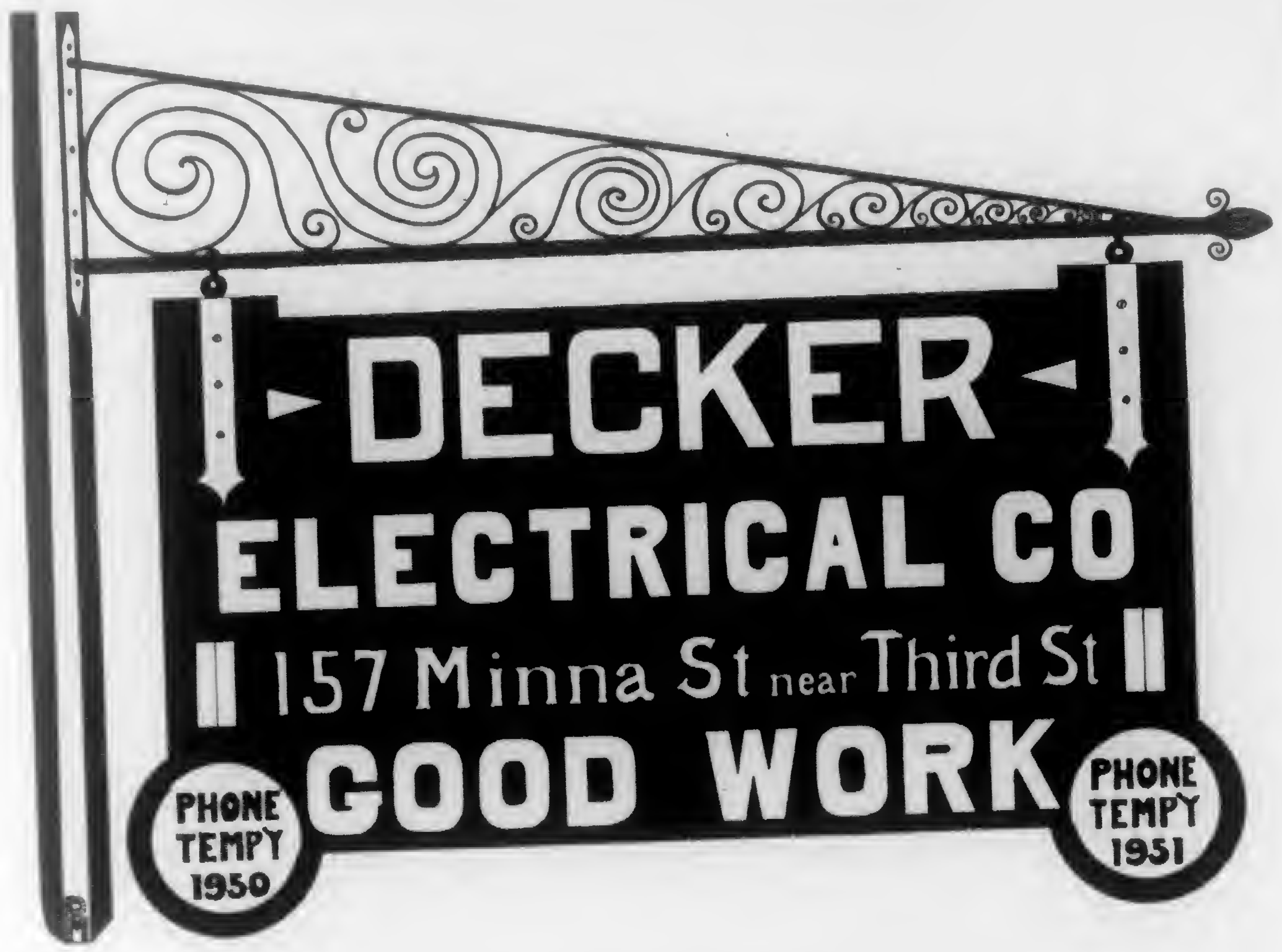
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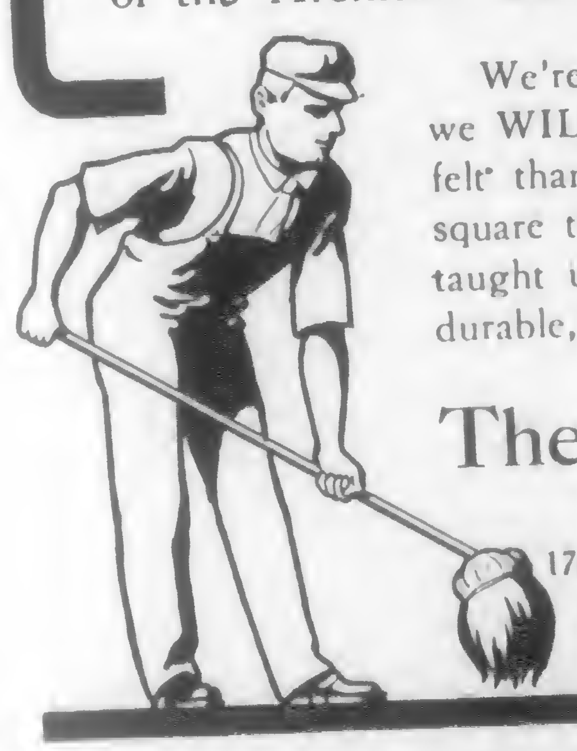
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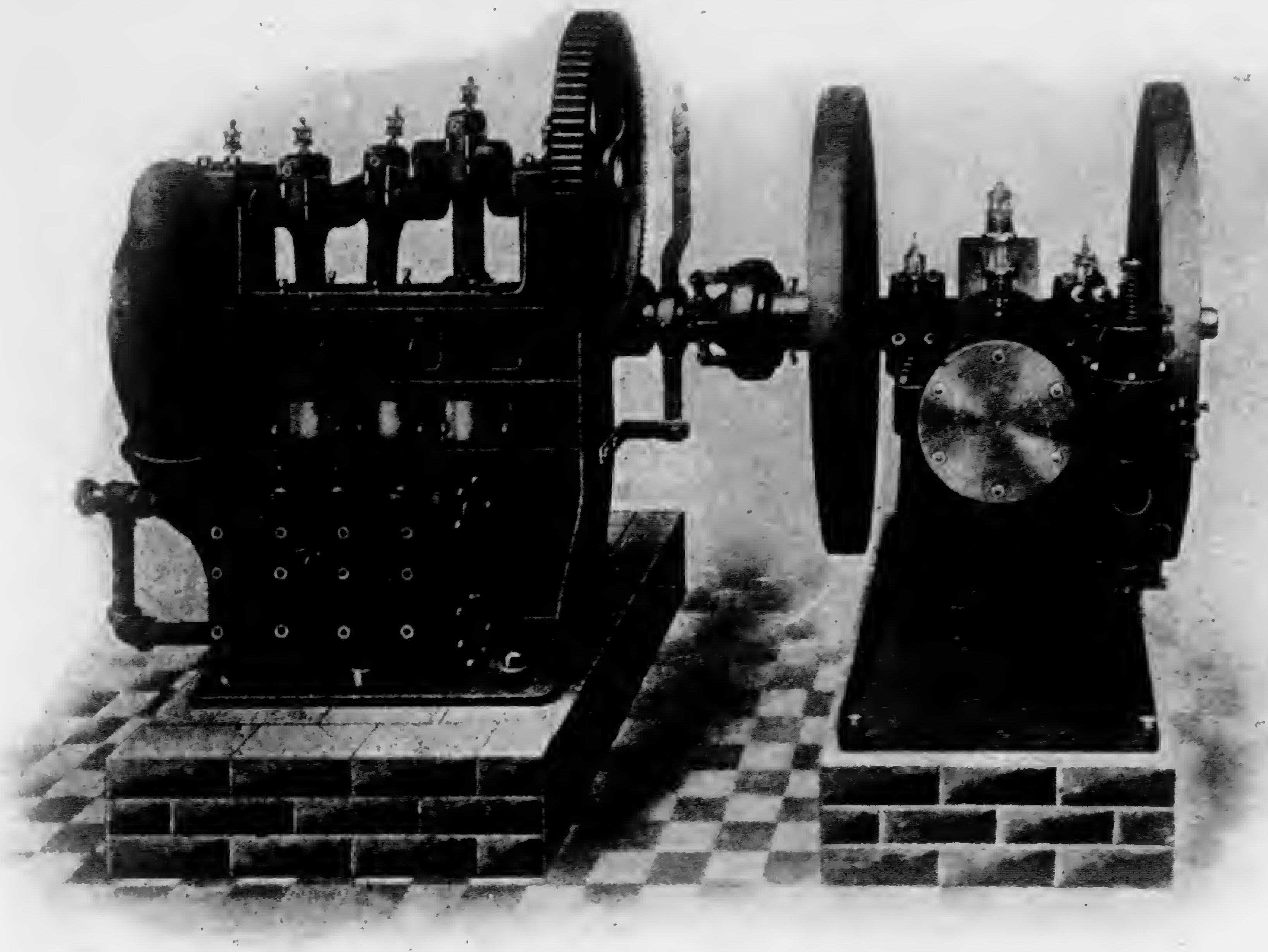
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LOUIS CHRISTIAN MULLGARDT, F. A. I. A.

Frontispiece, The Architect and Engineer of California, December, 1907

CHRISTMAS NUMBER

THE

Architect and Engineer

Of California

VOL. XI. DECEMBER, 1907. NO. 2.

The Commercial Value of Good Architecture

By LOUIS CHRISTIAN MULLGARDT, F. A. I. A.

THE rudimentary principles of architecture were discovered by man so many centuries ago, that no one knows how long, and it scarcely matters. We are altogether interested in the fact that architecture came into existence through man's inheritance of the three fundamental principals of construction: i. e. the pier and lintel, the post brace and beam, and the pier and arch.

Time dates so far back that its true significance is lost if coupled with the importance of that period in the world's history when man became sufficiently enlightened to recognize these three fundamental laws upon which succeeding ages have designed all that is known of the art and science of architecture.

These three rudimentary principles of architecture required many ages for their gradual development into those beautiful forms and proportions which are attributable to ancient, medieval and modern times.

Man's enlightenment directed him into a higher state of civilization, and the art of architecture progressed out of its primitive origin at the same ratio, and ultimately became the progenitor of the arts of sculpture and painting; as also that of the science of engineering.

Of all great things inanimate yet living, architecture finds its greatest synonym in the forests. Like unto the diverse specie of forest monarchs is architecture also diverse, according to the sections of the earth to which each is indigenous.

Transplanting of either becomes more common, as transmigration of man increases, or according to his needs, his will or his whim.

Each race of people inhabiting the earth now or in past ages, however deficient or advanced their civilization, invariably produced some form of decorative art alike to that of the painter or sculptor, and which, however primitive, invariably shows marked differences of form, color and expression from that of the art of any other race.

It is especially noteworthy and significant, that there are certain grades of civilization within all races, in which architecture does not advance, neither does it retrogress. This condition may generally be attributed to the laws of tradition which retard progress where they govern.

Still further down the scale we recognize the so-called barbaric races, whose peoples have no architecture. We know therefore, that the quality of architecture produced by a nation during any specified period, is invariably the direct expression of its degree of civilization and culture. Its architecture bespeaks its exact state of advancement and its refinement in all things ethical and spiritual as well as material.



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All of the best examples of architecture are clearly symbolic of the purposes which prompted their existence.

Any architectural production which does not truthfully express the purposes for which it was created, or, which falsely denotes its constructive principle, fails in the first essential quality, that of Truth, which is the highest embodiment of good architecture, and without which nothing can be good.

False architecture is corrupting in its influence to a much greater extent than is generally supposed.

We are constantly associated with the product of the architect's genius, and are obliged to observe many things by which we are unconsciously influenced, either for good or bad, truth or falsity, according to the nature or quality of that which we see.

The general public gets its knowledge of architecture, however superficially, through that which it observes daily along the city streets and suburban roads.

Architecture is something which most people profess to have considerable knowledge of—which is admittedly true, though unfortunately it is not usually of the right sort. This professed knowledge tends of course to excite a keener public interest in the architecture which it sees, which, if its quality be low in scale, must necessarily be retardent in its effect against the good influence produced by commendable work.

To produce good architecture requires many years of serious study, thought, observation, work: It requires careful guidance into the proper fields of research by those who possess a superior knowledge of the arts and sciences of architecture.

The discerning student guards himself particularly against acquiring the common knowledge of "business architecture," which may be had in many offices, common in every large community; for it is well known that the "Muse of Art" seldom folds her benign wings over a so-called "plan factory" where speed in turning out work is of first importance. True art in architecture like all else which is truly art, comes from the hard pressed soul of mankind, and not from a machine, or out of the purse.

Anyone pursuing the study of architecture with the object of entering the field of practice, must bear in mind that instinctive qualification is the true essence of good original work; however, instinctive qualification can only be brought into the field of usefulness through careful cultivation: Then again, culture alone will not produce art, therefore either alone, will not insure to the world a higher standard of architecture.

Many men possess a certain mechanical genius, which is frequently mistaken for an artistic temperament. They pass through the universities, receive their "sheepskins" in absolute confidence that they are Masters of Fine Arts—then they proceed to practice the profession of architecture on an "unsuspecting public", with full confidence that their work will astonish the public, and the profession in particular.

Most of our buildings are as a rule sufficiently well constructed to stand but poorly designed, both in plan and exterior.

If the law of gravitation should suddenly change, so that quality of design instead of construction would stand or fall according to its merit, what a fearful devastation there would be between our few then remaining examples of good architecture.

There is a steadfast opinion prevailing that this is essentially a Commercial Age—that we are so engrossed in our commerce, with a desire to make money, as to be blinded against the intrinsic value of true art.

It is a fact that some men undergo a decided change of love for the beautiful, whenever it commands a personal sacrifice for art's sake without apparent promise of "return with interest". Nevertheless, there is a strong current of true love for the best that may be had in art, and for which fabulous sums are willingly expended.

The majority of people are sincerely devoted to the fine arts, and in their earnest search for it are frequently led on the wrong scent by the aniseed of so-called art.

The man of commerce knows perfectly well, that art has an intrinsic value, especially in architecture, and that it is unequaled by any other potent force, for commanding a revenue if consistently introduced, therefore he looks for it for revenue's sake if not for the love of art for art's sake.

There are also many architects in every community who practice architecture "for revenue only", they devote their best talent and the greater part of their personal time and resources in search for additional work, paying little or no attention to the work already secured: The work in hand goes through the "plan factory" with all the speed that the office force is capable of, and the whole business is apparently carried on with the sole object of keeping the bill clerk busy.

What do the people who want to build know or care about the amount of grinding that is required in the preliminary stage, or at any time, whereby the true architect evolves the very best plan and design out of numberless different ways in which every problem can be solved.

The ultimate success of any design depends entirely upon the most serious preliminary study by the master mind.

Any problem which has thus been solved, is then ready for the drafting room, which is the architect's pattern shop.

There is no logical excuse for the architect who declines the smaller and less expensive class of work, on the grounds that he is too busy, but who at no time declines to accept or finds himself too busy to go after any of the larger work that he may possibly secure.

Inexpensive problems, such as residences, are as a rule by far the most difficult to solve. They are generally also the most interesting. Such problems demand the most careful study for a correct solution. They make up the major part of the architecture of any country, and they deserve to be designed with the greatest care by the best talent available.

The architect's moral responsibility to the great public is practically that of the physician, or surgeon, whose first duty is to serve when called, provided he knows himself to be qualified. The people of all Christian countries devote more time and money during this present era searching to acquire that which appeals to their artistic temperament than at any time during the world's history.

This is admittedly the commercial age of the world's history, but we must acknowledge that it is likewise the age of progress in art. An age in which art and commercialism thrive hand in hand. The two are emphatically interdependent, ample evidence of which may be found in whatever field we may choose to investigate, and compare with work which has been done throughout the great past.

The peoples of the world are making rapid progress in many fields of work. We of today are enjoying the unsurpassed advantages, which the law of inheritance has brought to us in knowledge of the results attained through centuries of hard toil and experience of nations which have gone before.

History, archaeological research, the sciences, especially those of photography and modern intercommunication, serve to keep us in intimate touch with the world's past and present: This great accumulation of

knowledge is our heritage, it establishes the mile-stone of the world's present day development, by which we are enabled to progress with greater confidence in each step which we advance.

It remains our duty as well as our privilege to profit by the failures as well as the successes of the past, that we may thereby better our condition, and increase the value of the heritage which we shall leave for succeeding generations.

* * *

Contractors Should be Protected Against Debts Contracted for Employees

MR. F. H. NEWELL, director of the Reclamation Service, in his report has the following to say regarding laborers working for his department:

"One of the most serious and complex problems with which the engineers have had to deal has been that of labor. As a rule the pay roll on the Gunnison project contains 800 or 900 names a month, while the number of men actually employed at one time probably does not exceed 450. This condition has confronted the contractors as well as the engineers who are directing the work carried on by force account. The contractors have been obliged to ship most of the laborers from the large centers and in many cases the men do not work long enough to repay the money advanced for their transportation expenses."

One of the greatest troubles that contractors have with laborers is that mentioned in the last part of the paragraph, the "skipping of transportation," as it is termed in camps. In carrying on heavy construction work in the country it is never possible to obtain enough laborers from the local sources, and, even where it is possible to get a large number of men, they are usually not accustomed to the work, and a large per cent will not stay on the job long enough to learn and become endured to the work.

Consequently the contractors must go to the laboring centers and carry men from them to their various jobs. The contractor must ordinarily pay agents to collect the men for him. In some cases, in order to carry men from one state to another he must pay a license. Then the men must be fed on the trip, their transportation charges paid, and after arriving at the work the laborer must be furnished bedding, often shoes and clothing to fit him for work, and must be given food while he works, and pays the debts he has contracted.

For any board furnished the man, he can be legally held, but, for the other money spent on him, the contractor has no means of recovering, except by keeping close watch on him. Contractors throughout the country, annually lose thousands of dollars through the desertion of men whose transportation they have paid. If contractors attempt to hold the men by guarding them, and thus prevent them from "skipping their transportation" they are liable to be arrested for peonage.

This is a condition that exists on much government work, as well as on private contracts, and as most men are taken from one state to another, it has become an interstate matter. It is a subject for Congress to handle and make such laws that will protect both the contractor and the laborer. Now that Director Newell has called attention to the subject it would seem an opportune time to better these conditions. This is one of the many subjects that the American Society of Engineering-Contractors will have to consider.

The Color Scheme of the Pacific Building

By CHARLES F. WHITTLESEY, Architect

YOU have asked me why I am using color so rashly in the treatment of the Pacific building at the corner of Fourth and Market streets, San Francisco. Your question surprises me as much as my color scheme seems to have surprised you; for I sincerely believe that the treatment is rational and logical, and though it probably strikes the majority of people, in its present unfinished condition as harsh and erratic, I feel confident that the completed scheme will win the approbation of the majority. In its present condition the green tile seems to bat one's eye violently, in contrast to the great expanse of gray cement of the unfinished building, and you may experience a further shock when I tell you that the green tile is to cover the entire exterior of the upper portion of the building, relieved only by the cream white terra cotta trimmings which grow more profusely decorated and become broader in mass as the finishing is carried upward to the cornice which crowns the building in a wealth of ornament in the same creamy white terra cotta.

A large woman draped in a silk gown of solid green unrelieved by any other color or trimmings would not perhaps meet with your approbation, but if the gown were overlaid with Irish point lace in broad cream-colored bands and especially if the lady possessed a profusion of rich auburn hair a la pompadour, would she not be attractive?

That reminds me that in the cartouche at the top of each of the tall piers between the windows of the building in question, there will be the merest touch of bright vermilion in the ornament, like a brilliant stone in your satin cravat. But I have not answered your question; why did I do it?

Because the climate of our city is decidedly gray and this is accentuated all about town, especially in the large buildings by the use of a peculiarly gloomy stone of a disagreeable yellowish gray color that catches and absorbs much of the smudge carried on the winds.

This town is so shady in color as well as in morals, that a little spot of white, whether it be of terra cotta or holy water attracts attention like a diamond dropped in the mud; and that is why my color scheme which is really soft, strikes you at first as being too strong. And if when it is finished you still think it too hot, you will need to walk on the other side of the street only for a few months till the elements (the dust in the wind) have softened and blended it a wee bit.

Moreover, the poor people coming down town on the Market-street cars on a foggy morning will feel a glow of grateful warmth as they pass the corner of Fourth and Market, and it will not be all on their right side either, for just across the street I am covering the Westbank building with cream white terra cotta over the entire exterior except for the spandrels over the mezzanine arches, which will be in the hottest red you ever heard about. If this polychrome treatment is a failure the crime is on my head and not on the owners, for it required considerable persuasion to get their consent to it.

You have asked me also what my precedent was for it. I hadn't thought about that, but you will recall that the Moors, the Greeks, the Romans, the Pompeiians and the Egyptians used brilliant polychrome effects in the best examples of their architecture, and in mediaeval times the Italian cities, and in Germany and Austria strong colors were lavishly used on the exterior of buildings.

In our own country, some of the most recent and successful buildings in New York are in polychrome terra cotta, notably Dr. Parkhurst's church.

If you are asking for local precedent, I will ask you if you expect me to follow local architectural precedent in making bad copies of dismembered parts of ancient Greek temples and vainly endeavoring to adapt them to modern

commercial purposes, where the building law requires that we build no structure outside the street line and the owner demands that we give him every foot of rentable floor space and all the glass surface possible for sunlight?

Would you have me follow the stupid precedent of building ponderous cornices in sheet iron in imitation of massive stone from that same ancient temple?

When the Pacific building is finished it will give me great pleasure to stand beside you on the opposite corner of the street and explain to you the logical development of the design, the reason for the masses where masses are, the relation of enrichment to reposeful surfaces, and listen to your enraptured murmurings of commendation for the color scheme.

* * *

The Production of Common Brick

OF THE long list of mineral products of the United States concerning which statistics are collected by the National Geological Survey, only three—pig iron, copper and bituminous coal—exceeded in value in 1906 the products of the clays; and of the clays themselves the product ranking highest in value was, as heretofore, the common brick, of which more than ten billions—to be exact, 10,027,039,000—were marketed during the last year. The value of this great product amounted to $61,300,-696, an increase of $93,687 over the value of 1905, and constituted 47.30 per cent of the value of all the brick and tile products, and 38.07 per cent of the value of the entire product of the clay industries.

The largest production of common brick in 1906 by any one State was reported by New York, whose output amounted to 1,535,579,000 brick, valued at $9,205,981 or about $6 per thousand. This quantity represents 15.31 per cent of the entire output of the country, and the value is 15.02 per cent of the total. The greater part of New York's common brick comes from the Hudson River region, which is one of the most interesting centers of the clay-working industries in the United States, and has for many years been the almost exclusive source of supply for the common building brick used in New York City.

Next to New York, the largest producer of common brick in 1906 was Illinois, which reported an output of 1,195,210, brick, valued at $5,719,906, or $4.79 per thousand. The great common-brick producing region of Illinois is Cook county, and it was the decline in price in this district that brought the average price per thousand for the State to $4.79, the lowest for several years.

The only other State reporting more than a billion common brick was Pennsylvania, whose marketed output amounted to 1,027,541 brick, valued at $6,586,374, or $6.41 per thousand. While third in quantity the product of this State was second in value, and the average value per thousand was greater than that for either New York or Illinois.

Ohio's production of common brick in 1906 was fourth in quantity and value—550,422,000 brick, valued at $3,243,157, or $5.89 per thousand—and New Jersey's was fifth, amounting to 413,258,000 brick, valued at $2,610,686, or $6.32 per thousand. The other states range from Kansas, with 314,-371,000 brick, valued at $1,376,552, or $4.38 per thousand, to South Dakota with 6,064,000 brick, valued at $54,175, or $8.93 per thousand. California's 278,780,000 common brick were valued at $1,962,866, or $7.05 per thousand.

The average price per thousand for common brick in 1906 ranged from $9.69 in Wyoming, to $4.38 in Kansas, the average for the whole country being $6.11. The State whose average per thousand most nearly approached the general average was Tennessee, where the average price was $6.13 per thousand.



The Hooker & Lent Building, First & Market Streets, San Francisco
Meyer & O'Brien, Architects *Equipped with Otis Elevators*



The Nativity

An Appreciation of Stained Glass

By JOHN CALVIN SPAULDING*

THE church has ever fostered religious art. The masterpieces of the early painters were inspired by the sublime earthly life of our Lord, and to the church—with its encouragement and patronage—belongs the credit of making possible these masterpieces. To the church belongs also the credit of their preservation, a wonder, an inspiration and a help as they are to all who are privileged, in these later days, to see them, and to catch, perhaps, a breath of the spirit, the heart, the soul and the deep reverence that entered into their creation. We possibly cannot realize today, how great a help these representations were to the churches of old, struggling as they were, to overcome adverse influences. Those were times when the evidence of the eye was more or less essential; and from the fact that through the church, they were preserved to us, we may well believe that the artists were important instruments in the spread of the gospel.

The spirit of the season is symbolized in the beautiful half-tone illustration of "The Nativity," which accompanies this article. It is, indeed, a masterpiece and was made by the MacKay Company for one of our great cathedrals on the Pacific Coast. The picture is unusual in that it possesses the Tissot touch, an artist whose fame as a painter of Palestine life and characters is world wide. In the picture are shown the humble shepherds who were the first to see the Christ. The painting, of course, is much more effective than the photograph, for the rich oriental colors are produced with skill and marvelous accuracy.

The art of stained glass is so closely allied to ecclesiastical decoration that it very naturally followed the fortunes of the church and its patrons. A brief review, therefore, of its growth in Europe, up to the Renaissance period, may be interesting. Its growth was not so much due to national prosperity, perhaps, as to the fame of a church, the prosperity of a bishopric, or the devotion of a patron. Neither war nor pestilence seems to have retarded its development. The more men died, the more and the greater was the need for the church and for its ministrations; for which gratitude was often expressed by the gift of a window, given to the glory of God and in memory of those passed away, or as a memorial to the ministering.

These memorial windows, therefore, were spread over the various countries where glass painting was practiced, in a manner that strikes us—with our lack of knowledge of local history—as being capricious. A wonderful wealth of glass is found in places now of so little importance in the world, as to cause us to wonder how it came there; but a study of local history usually clears up the mystery; and when it does not, we can safely put it down to the account of some art-loving ecclesiastic or pious donor whose name is lost.

The art seems to have arisen in France—we believe during the reign of Charlemagne—and spread from France throughout the world, the Crusades adding their impulse.

We find the earliest glass in places of historical interest. In St. Denis, in the twelfth century, Louis VI was educated; Chartres was a famous place of pilgrimage; at Reims the French kings were consecrated, and at Bourges was an archbishopric. During the thirteenth century conditions in France became more settled and the art naturally advanced under the reign of a king who was so pious as to afterward become canonized. Cities of importance, like Auxerre and Amiens, with the granting of their communal charters, burst into patronage of the art. During the Hundred

*Mr. Spaulding, formerly of the Tiffany studios, New York, is manager of the San Francisco office of the MacKay & Co., Los Angeles.



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Years' War and the ravages of the Black Death, which laid France waste from the Somme to the Loire, the art suffered, but at Troyes, the place of famous fairs, and at Chartres and Evreux (both important sees), good work was done. Toward the end of the century the country began to right itself, and we find fine windows of this period at Bourges, and at Rouen.

The great people of the sixteenth century from the kings downward, made patronage of the arts fashionable, and the origin of many conspicuously fine windows can be traced to their munificence, viz., in the Church of Brou, the gifts of Margaret of Savoy; at Ecouen and Montmorency, the gifts of the family of the great Constable; and at Liege and Brussels, the gifts of Charles V. In England, under Edward I, important glass of the thirteenth century is found in Canterbury, a place visited by pilgrims from all over the world. It was found also at Salisbury and Lincoln, both seats of parliament; and at York, a great cathedral town. Comparative peace reigned in England during the fourteenth century. This accounts for the great progress of the period, and we find much glass of this time in that veritable treasure house of art, York Minster. This was probably put in by William de Melton, an archbishop active in civil affairs, and one-time Treasurer of England. Fine glass of this period is to be found at Gloucester, due no doubt, to the burial there of the murdered Edward II, and to the donations by pilgrims to his shrine. Under Henry the fourth, with the nobles at the seat of war in France, and with the Concessions to the Commons, great impetus was given to the art, and fine work of this period is found in All Souls in Oxford. The best examples of the Renaissance period to be found in England, are at Litchfield and Hanover Square.

In Germany, early glass is found in Cologne and Strasburg. Toward the close of the thirteenth century German glass began to assert its great importance. However, as the Free Cities of the Empire were strong enough to form Leagues with which even princes had to reckon, it is not wonderful that in these cities (the seats of industry, and refuges from war and its unrest), the people prided themselves on the enrichment and glorification of their churches with the richest stained glass.

Strasburg was famous for its glass, Nuremburg also, and, too, the important trade cities of Regensberg and Freiburg.

During the fourteenth century the War of the Margraves broke the power of the cities; but the empire prospered, and this prosperity is chronicled in glass. Nuremburg, under Maximilian; Freiburg, the seat of the university; Ulin, a trade centre; and Cologne—always of ecclesiastical importance—have fine glass of this period. A lull in glass painting, due, no doubt, to the subsidence of the fervor of church decoration during the Reformation, occurs in Germany during the early part of the Renaissance period. Still we find that the Burgomasters of the Reformed cities of the United Netherlands, continued at Gouda the wonderful series of windows begun by Philip and Mary.

In Italy we find documentary mention of glass as early as the tenth century at Monte Cassino, and we know that there was a famous glass manufactory at Murano. But though we have some splendid examples of the fourteenth and fifteenth century work at Assisi, Florence, and at Pisa, yet but little glass of the fourteenth century exists today.

During the Renaissance period the prevalence of mural painting in Italy seriously hindered the growth of the art of stained glass; for it was not until long after this period that the improved glass and technique, made successful combination of the two practical. We find some instances, however, of where the French glass workers were invited to work with the great mural painters of that day—notably at Arezzo, and with wonderful results.



The Transfiguration, The Resurrection and The Ascension

These Windows Have Just Been Installed in Trinity Church, San Francisco by MacKay & Company

We have followed this story of glass from its beginning to the period of the Renaissance, when the great revival in the arts spread over the world, and the interchange of ideas and methods between nations became universal. From that day to the present the masterpieces of religious art have been reproduced in glass with ever-growing success and fidelity. This is due to study, to improved glass, to technique and methods. Often-

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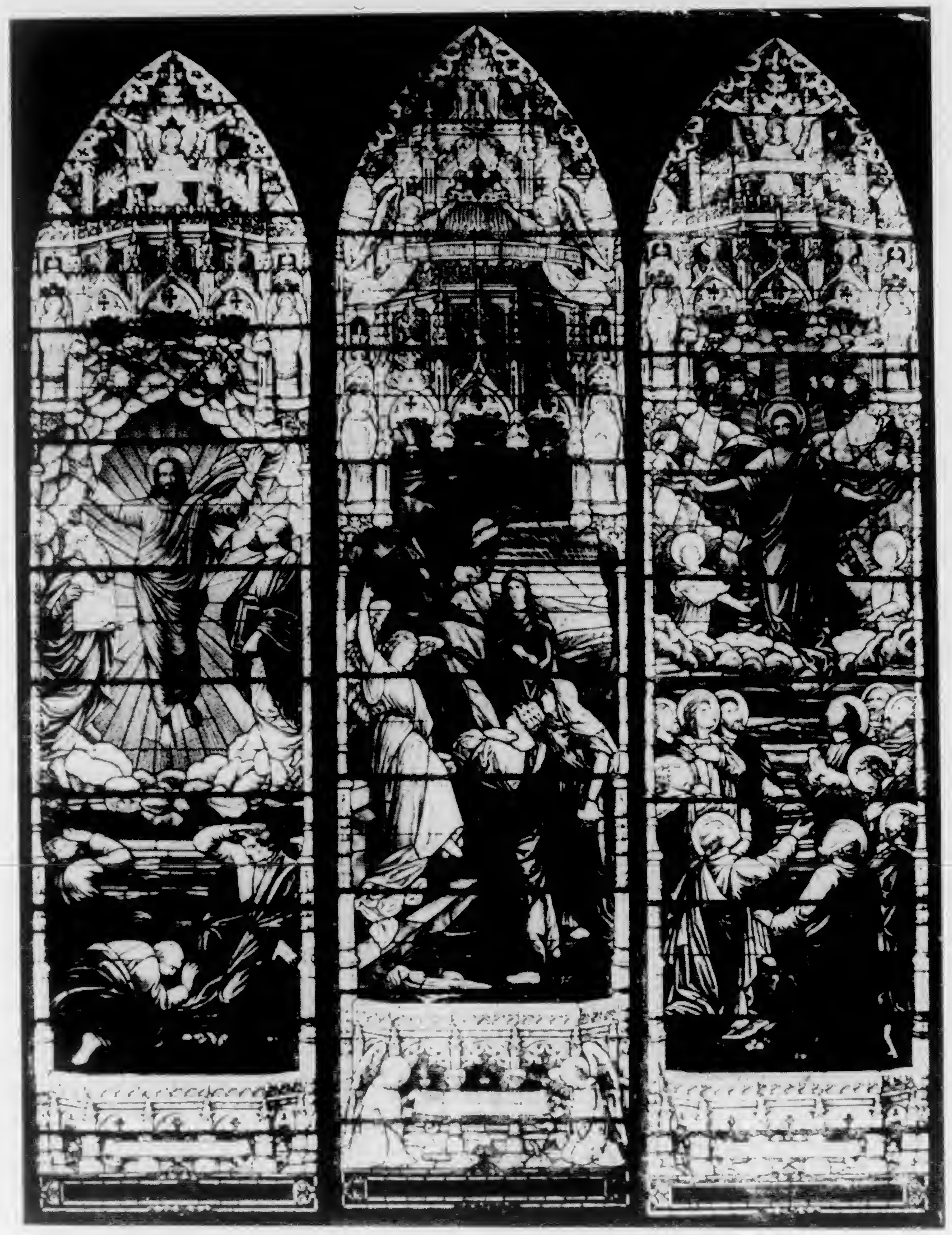
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times the beautiful colors in the old windows were due to imperfections in the glass, the drawing very often, too, was grotesque and the lead lines did not accommodate themselves to the design.

Today, however, we are absolute masters of the materials we handle, and better, more true and more beautiful windows are produced than ever before. This country has evolved a method of its own; namely, the Mosaic method, by which means the designs are carried out in glass colored in the pot, painting being employed for the flesh-tints only.

The three windows just placed in Trinity Church, San Francisco, are the highest examples of true painted work. It is the writer's opinion that there are few windows, if any, in this country that excel them in beauty of design and coloring. The group of three windows represent great occurrences in our Lord's earthly life: The Transfiguration, the Resurrection, and the Ascension.

The "Transfiguration" is an adaptation of Raphael's great painting, which now hangs in the Vatican. It was his last work, and is one of the greatest paintings in the world—probably the most celebrated. This scene is outside of our Lord's usual earthly experiences, and stands entirely apart from every other event during His ministry as a single extraordinary manifestation of His divine glory.

As we look at the window it seems, in its symbolism, to be, for the instant, a meeting place of Heaven and Earth: Heaven expressed in the wonderful glory and change in the appearance of our Lord, and earth in the deep shadows below on that lonely mountain top, the dazzled eyes of the three disciples, Peter, James and John. Moses and Elijah, representing the Law and the Prophets, appear at either side and bear testimony to His Divinity; symbolizing human immortality—two earthly lives continuing their existence in another world and preserving their identity. The whole scene may well be likened to a flash of lightning in a dark night, which for an instant reveals the world; or to the lifting of the fog at sea, showing a glimpse of a ship under full sail, and then closing down again. And so in the Transfiguration are we for a moment able to get a glimpse of the "glory that shall be revealed."

What a scene is represented in the "Resurrection Morning" window! This is an adaptation from the wonderful work of Axel Ender. Travelers from over the seas bring back glowing reports of a fine altar painting in the Cathedral of the little Norwegian town of Molde, the original from which this subject was taken. The dawn of a new day after the dark night, is beautifully brought out by the artist; the lights and shadows tell the story so that "he who runs may read"; it tells the story that makes perfect and complete the work of Redemption, for how incomplete would have been His ministry had it ended in the grave! Mary of Magdala, the other Mary, and Salome, coming early in the morning of the third day to the Tomb, find the stone rolled away, see an angel, the glory of whose presence fills the place, and who says unto them, "He is not here, He is risen." This was the dawn of the First Easter morning, and to the faithful women was given the blessed privilege of bringing the glad news to the sorrowing ones. In the distance is shown dark Calvary, and still farther away the city of Jerusalem, the rising sun throwing its rays over the house-tops, symbolizing the "Light of the world" that dawned that day for all time and eternity. Love survives the world—the mighty power of Rome sealed the grave of our Lord, but a mightier Power broke the seal and rolled the stone away.

The words of Dr. Storrs of Brooklyn beautifully express this thought: "Christ is risen; then the world is beautiful,—it is not a place of graves: it is a place of graves that are to be opened. It is not the city of the dead, it is a portal of Paradise; and there is a light upon it each Easter morning, such as never was before on sea or shore until the Master had risen from the grave."

As the prophecy of the Transfiguration was fulfilled in the Resurrection, so the Resurrection in turn is completed by the Ascension. The three incidents are indissolubly connected by our Lord's own words, and are happily made companion subjects in this series of windows.

"And He led them out as far as Bethany, and He lifted up His hands and blessed them, and it came to pass, while He blessed them, He was parted from them, and carried up into Heaven." The artist has chosen for his subject the moment of last vision, just before the "cloud received Him out of their sight." The calm, serene faces of the apostles are beautiful in their symbolism, having lost all traces of the agonized sorrow with which they witnessed the Crucifixion. They are sure and safe in the knowledge of a risen Lord and comforted by His last words and the words of the two angels, who said, "Ye men of Galilee, why stand ye gazing up into Heaven? this same Jesus, which is taken up from you into Heaven, shall so come in like manner as you have seen Him go into Heaven."

The Ascension brings to a close the great story of the Incarnation. But of the history of the church it is but the opening chapter—a thought symbolized in the window by the footprints of the Lord, and the message this brings is clear and strong, that our Lord has left His indelible impress with and upon us, and that we should ever walk in His footsteps, led by Him, who gave as His parting promise, "Lo, I am with you alway, even unto the end of the world."

* * *

Brick Versus Stone

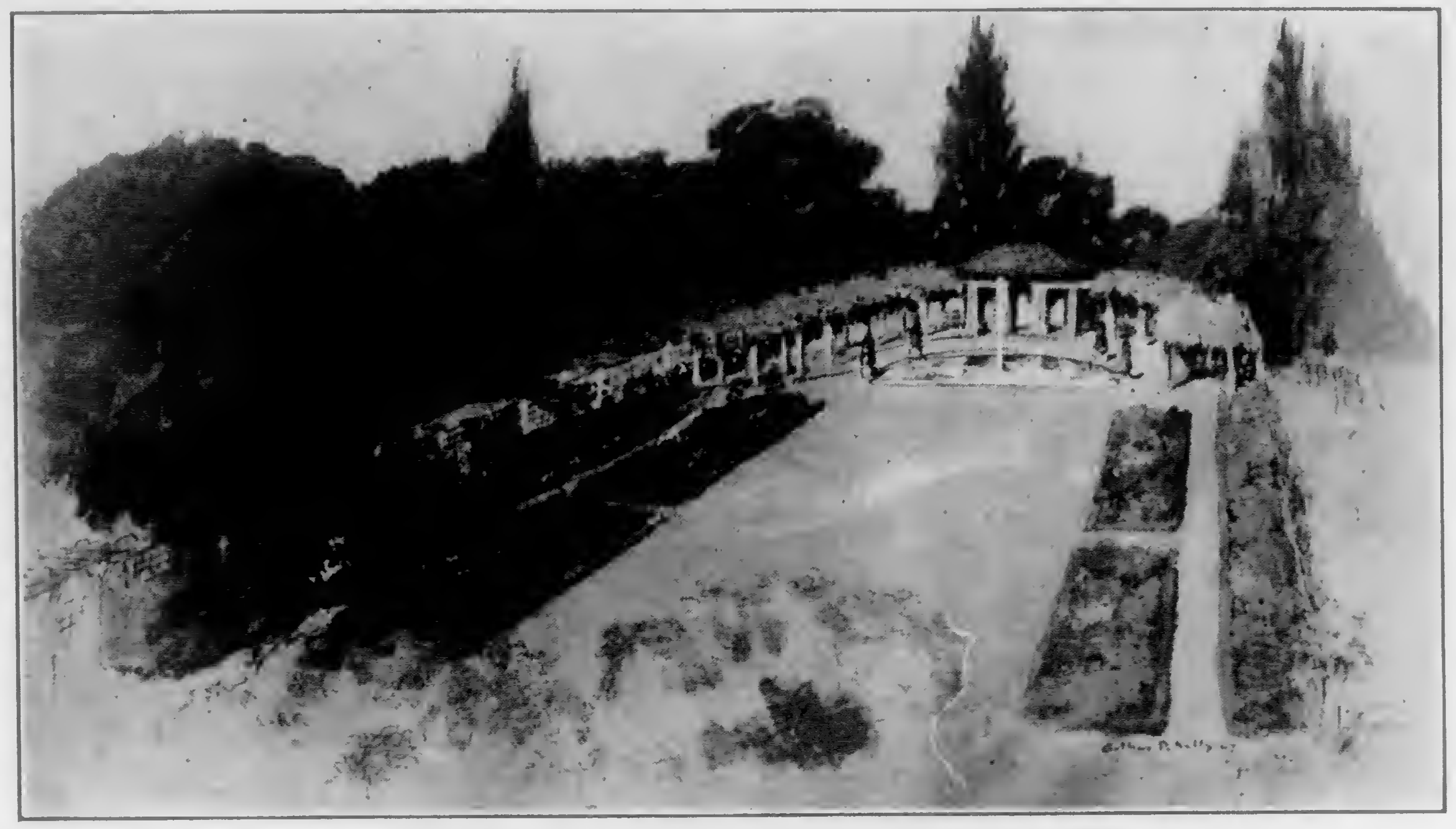
WE OFTEN hear the statement that all bricks are alike, and that almost any brick is fit to use in a building if properly laid. It is, however, never safe to assume that a brick is enduring and suitable for building operations unless we know its composition. The most potent factor which must be guarded against is the presence of salts of magnesia. It is only a question of time when bricks in which these salts are present in any appreciable quantity will be badly influenced by the weather, and we have seen bricks, which, when fresh from the kiln, gave every mechanical evidence of being of best quality so shattered and disintegrated by the combined effect of moisture, frost, and the chemical action of the magnesia, that a knife could be thrust straight into them with very little effort. Fortunately, there is so much good clay in this country, and so many thoroughly reliable brick manufacturers, that there is really no excuse for bad bricks ever being used, but any brick is not necessarily a good brick, and as much care and intelligent discretion must be used in the employment of this material as in connection with any building medium. There is a common conception that granite is one of the most enduring stones, but as a matter of fact most granites would be outlived by thoroughly first quality hard burned brick. A pure syenite, free from iron or mica, constitutes the most enduring of the granites. A granite quarry may have good stone in some portions of the deposit and be utterly worthless in others, and as a general rule it is not safe to use a granite unless the architect knows absolutely its composition and the part of the quarry from which it is taken. Sandstone is really a bad building material. The cementing material in sandstone has a very slight value, and it is probably the poorest material extensively used, as far as resisting the action of frost is concerned, while the presence of iron constitutes an almost fatal defect. It may be said also that very little sandstone is free from iron.—Exchange.



BRONZE STATUE of ROBERT BURNS.

The statue has been placed in Golden Gate Park, San Francisco. It weighs more than a ton and was cast at the foundry of Louis De Rome, to whom the sculptor Earl Cummings, sent the original pattern. The statue, with the granite base, cost between $15,000 and $20,000 and has been pronounced a marvelous representation of the famous Scotch poet.

Bronze Statue of Robert Burns, the Scotch Poet



Old Fashioned Garden, Howard E. Huntington Estate, Pasadena, Cal. Wilbur David Cook, Landscape Architect

The Howard E. Huntington Estate

By WILBUR DAVID COOK, Landscape Architect

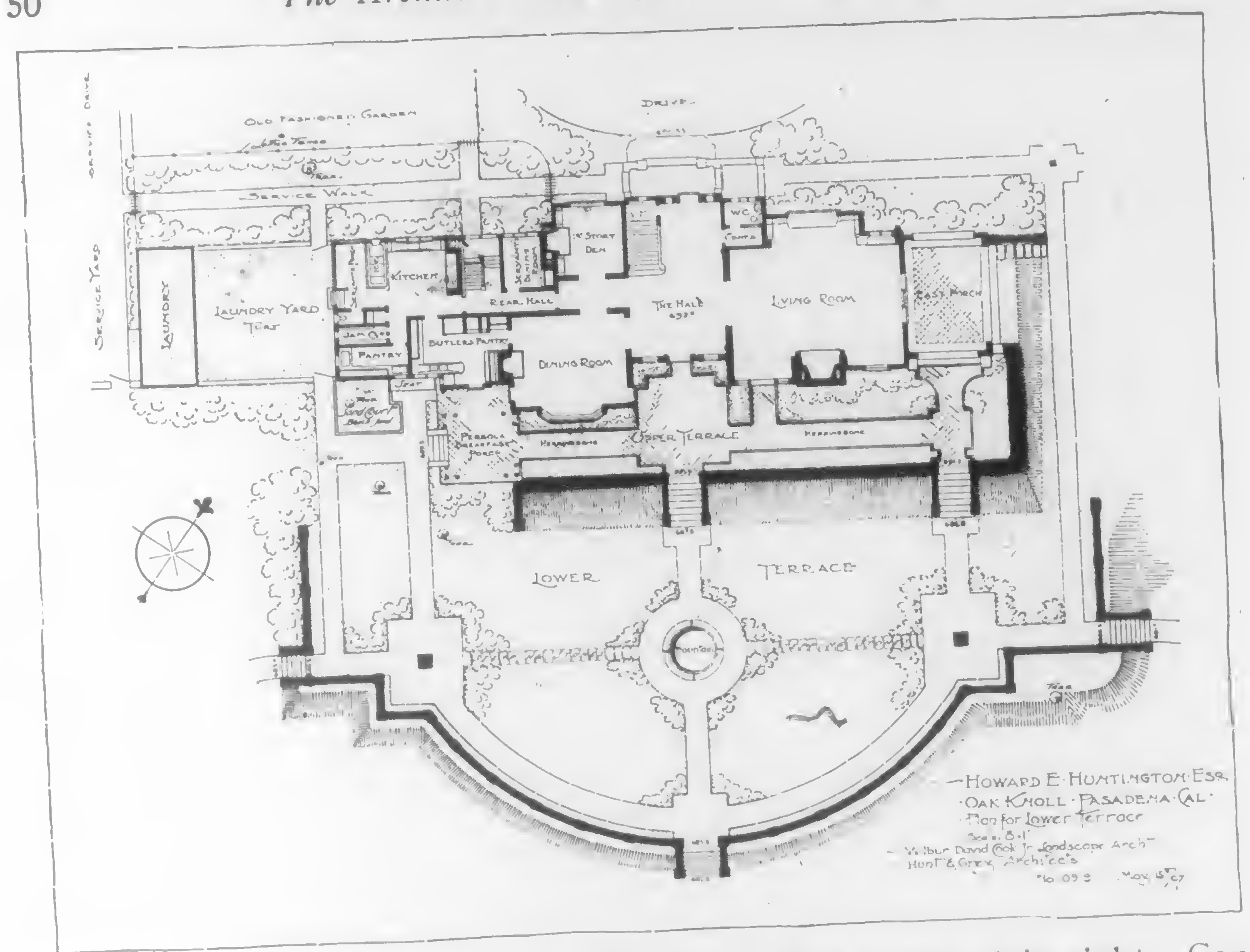
THE writer was called upon to prepare plans for the development of this estate at Oak Knoll, Pasadena, and as the problem was a typical foothill proposition, it may be of interest to note how it was treated. The site is a magnificent one consisting of twelve acres of undulating land heavily wooded on its boundaries with a fine growth of live oaks and pepper trees.

On the east the property runs down to a picturesque wooded cañon; the west boundary is formed by the county road known as Pepper Drive. The recently constructed electric railway line leading by the Hotel Wentworth cuts the south boundary and the Perkins' estate (owned by Mr. Huntington's sister) forms the northern boundary.

An inspection of the topographical map No. 1 will give an excellent idea of the existing conditions, but unfortunately it cannot give any idea of the extensive view commanded by the residence from this site. It is enough to say that the angle of view embraces over 180°, sweeping over the valley below with its well kept orange groves to snow capped Old Baldy in the distance, taking in the Santa Monica mountains in front and terminating at Mt. Lowe.

The approach and service drives as shown on the topographical map had been constructed by the owner when he called for help. The only thing that can be said in their favor was that they were on grade, and that they avoided the trees. The approach drive as constructed was convenient of access in coming from Pasadena, but exceedingly inconvenient of approach from Los Angeles, the line of most frequent traffic.

To reach the service drive one was obliged to enter at the main entrance, follow the approach drive for half its length, turn to the right and follow this drive to its terminating loop, which left the service vehicles



standing within twenty-five feet of the front door and in plain sight. Conceive the pleasure of arriving or departing guests being compelled to encounter the garbage wagon, ice wagon, coal wagon, etc.

These driving lines then as constructed were stiff, awkward and inconvenient. It was at once apparent that they should be given some character, made more convenient of access, and that the service drive should be sharply separated from the approach drive and its entrance and that it should terminate in a service yard as far removed from the front door as possible and yet be conveniently accessible to the service end of the house. To still further separate these two drives it was proposed to locate the Old-fashioned and the Japanese Tea Gardens where shown on the general plan. Fortunately, too, this was the only available location for a garden of this character, and as the existing view from the house in this direction was rather uninteresting, it was desirable to create a vista here, where it would not conflict with the magnificent views from the south terrace.

The terminating loop of the approach drive as constructed extended so far to the east as to destroy the privacy enjoyed by the occupants of the east porch and it was decided to pull it back as shown. It was also necessary to provide for a garage, yard and drive to be convenient of access from Los Angeles. The garage was located on the north boundary line as shown on plan, amid a grove of live oaks and screened from view from the Pepper Drive, and it is proposed to plant an orange grove as indicated. The vegetable garden is to be located just east of the garage.

These various drives were constructed practically on grade and with the loss of but one tree.

A system of circuit walks were then planned as shown, accessible to the car line at the south, skirting the edge of the woods connecting with the Perkins' estate through the cañon. A separate entrance walk was also provided for the servants' use, leading from the Pepper Drive to the service yard.

In looking up at the house from the south boundary the rise of the hill intercepted the line of view, cutting off the lower portion of the house and causing it to strike about midway of the windows on the second floor. To overcome this difficulty as far as possible a lower terrace was constructed to be enclosed with a low balustrade.

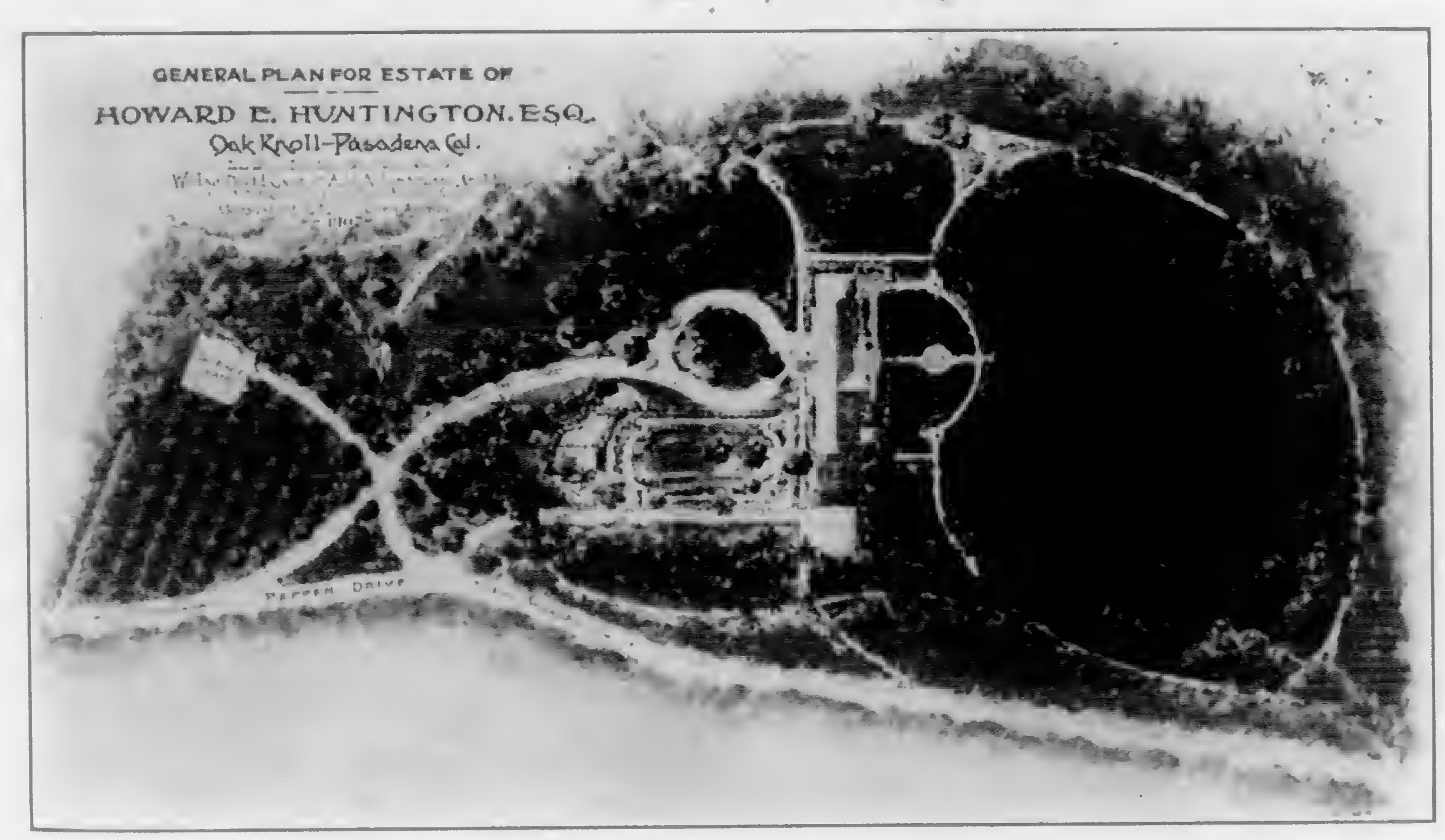
It was also desirable to limit the area of well-kept lawn by well defined lines of fixed construction.

The entire treatment of this lower terrace was designed to be quiet, simple and dignified, without floral display or with any features calculated to distract the attention from the restful, magnificent view to be secured from this point of vantage.

In closing we wish to say just a word with reference to the Old-Fashioned Garden and Japanese Tea Garden. These gardens are to be surrounded with an artistic lattice fence of redwood, oiled and in color scheme to match the house. The walls were kept straight for perspective effect and are to be edged with box edging, as are also the flower beds, which are to be filled with phlox, thyme, sweet william and other old-fashioned flowers. The old fashioned garden terminates in a semi-circular eucalyptus pergola meeting a palm thatched tea house in the center. The entire structure is to be covered with roses. The tea house is given a pleasing setting by the installation of a fountain basin, as shown in sketch. The central space was kept open as a parterre and the centre of this space will be occupied either by a sun dial or a croquet lawn.

A trellised backing is to be provided for the pergola and tea house to sharply separate the two gardens, so dissimilar in character as to require such separation. Access to the Japanese Tea Garden to be secured by passing through the tea house out over a rustic bridge spanning a small lotus pool, in which will be found aquatic plants and goldfish. Here, also, will be found such Japanese plants as are hardy to this climate. This miniature garden was planned to provide a place which would be absolutely private and secure from intrusion.

The house was designed by Hunt & Grey, architects, of Los Angeles.



General Plan for Estate of Howard E. Huntington, Pasadena, Cal.
Wilbur David Cook, Landscape Architect



The Macdonough Building, San Francisco
William Curlett, Architect *John B. Leonard, Engineer*
Equipped with Otis Elevators *Thompson-Starrett Co., Contractors*

The Macdonough Estate Building

By W. P. DAY

A RECENT acquisition in the building line in San Francisco is the seven story Macdonough building, the property of the Macdonough Estate Company, situated on Kearny street, between Bush and Pine. It is of the reinforced concrete type of construction throughout, 101 feet high from the sidewalk, with a frontage of 86 feet on Kearny street and extending 38 feet 5 inches to the street line in the rear; the sidewalk is 18 feet in front and 4 feet in the rear. The available floor space in the building is approximately 31,200 square feet.

The structure is supported by 18 columns and pilasters, most of which are in three sizes, and all reinforced with longitudinal bars and wrapped with one-quarter-inch wire at variable pitch, consistent with the stresses to which the columns are subjected. Six of the columns are placed on the regulation stepped footings for distribution, reinforced as shown in the typical detail. The use of turned up shear bars was resorted to in order to preclude the possibility of the columns' punching through their respective footings. The column rods are placed upon a cast iron plate embedded in the footing. Six of the 12 remaining columns have their outer sides on the lot line, and their respective loads are balanced by those of six interior columns, with a slab shown herewith in detail.

The live loads used in computing the floors were as follows:

Roof	50	lbs.	per	sq. ft.
Typical floor.	75	"	"	"
First floor...	150	"	"	"
Sidewalk ...	300	"	"	"

A reduction of the live load was made in designing the columns and foundations, as allowed by the San Francisco Building Ordinance. During the progress of the work the first floor was loaded over one panel with a pile of rock eight feet high. The resulting deflections were inappreciable. Curtain walls were made 6 inches thick and plastered on the outside with a three-quarter-inch cement mortar of equal parts of cement and gravel.

A little more than 1800 cubic yards of concrete were used in the construction, the mixture up to and including the first floor being one of cement, two of sand and 4 of broken rock; above this floor the mixture used was one of cement, three of sand and three of broken rock, the latter mixture giving a denser concrete. Hilton's cement and what are locally known as beach sand, blue rock (¾") and Napa gravel were used throughout. The quantities of materials used in the structural portion, exclusive of finish on floors, were approximately:

600	loads	of	rock
270	"	"	gravel
250	"	"	sand

Each floor and the basement were finished with three-quarter-inch cement mortar, one to one, and required, in the aggregate, about 75 loads of gravel, 15 loads of sand and 650 barrels of cement. Concrete in the columns was poured to the bottom of the haunches on the beams and allowed to set for at least 24 hours, when pouring was resumed until the beams and slab were completed. All beams were provided with haunches. All concrete was mixed in a cone gravity mixer.



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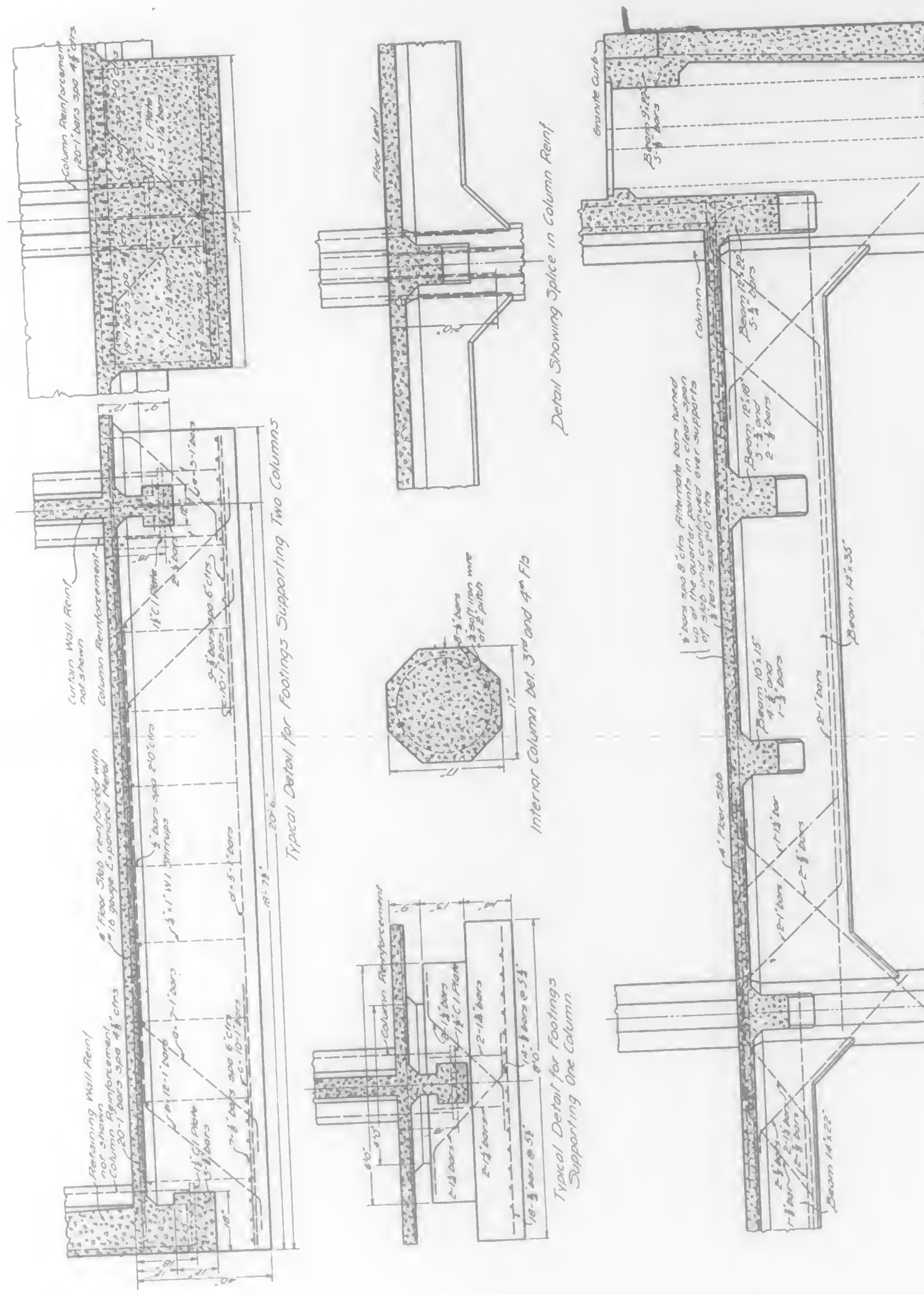
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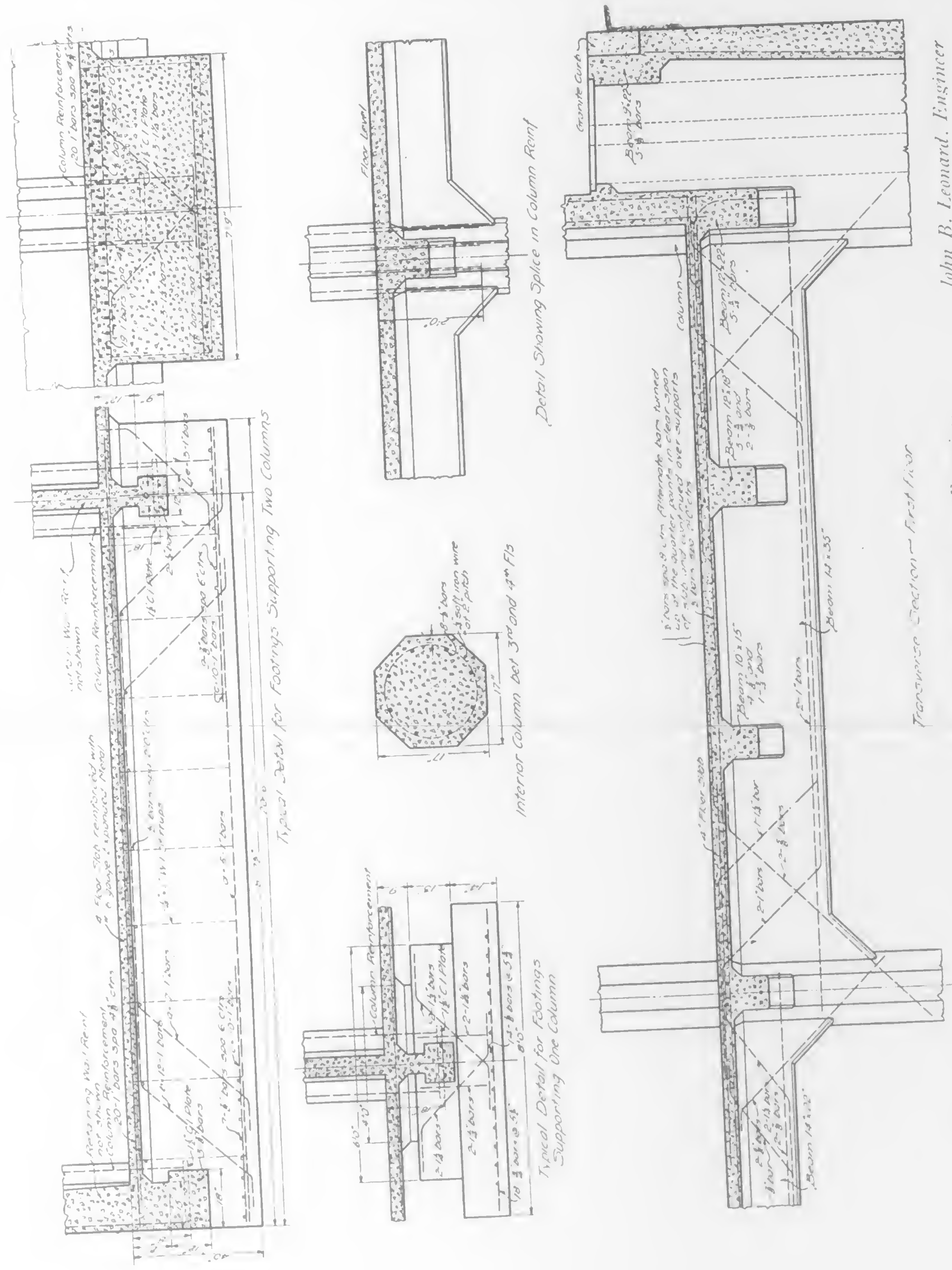
William Curlett, Architect *The Macdonough Building, San Francisco* *John B. Leonard, Engineer*



The Macdonough Building, San Francisco
View From Kearny Street, Taken Four Months After Excavation Was Begun; Note That Five Sets of Forms Are Used

The reinforcement consisted of New Style Corrugated Bars, about 140 tons being used in the structure. All bars up to three-quarter inch were bent cold; larger bars were heated in a hand forge.

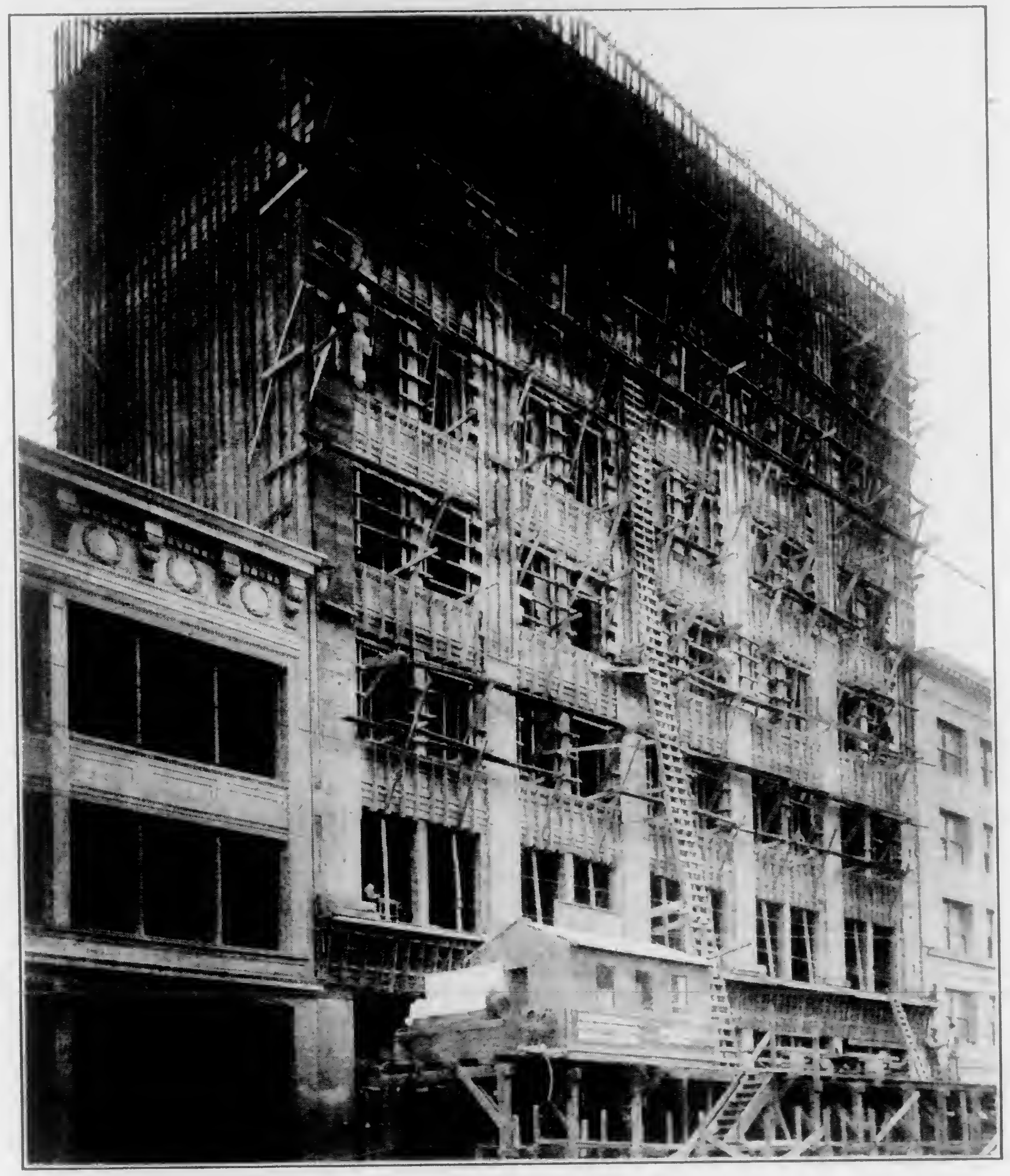
As an aid to the accurate placing of the steel for the floors and in order to raise the bars off the forms, three-quarter-inch strips of timber were placed at intervals to support them; on stripping, these were removed and the space filled in. The longitudinal reinforcement of the columns was wrapped with wire, by feeding the core as it revolved on a horizontal axis. The wrapped core was then set in vertical position in its prescribed place in the building and the form built around it. The connection of all column rods occur just below each floor and is accomplished with a lap only. Typical details for the position and bending of the reinforcement are shown on the detail sheet.



John B. Leonard, Engineer

The Macdonough Building, San Francisco

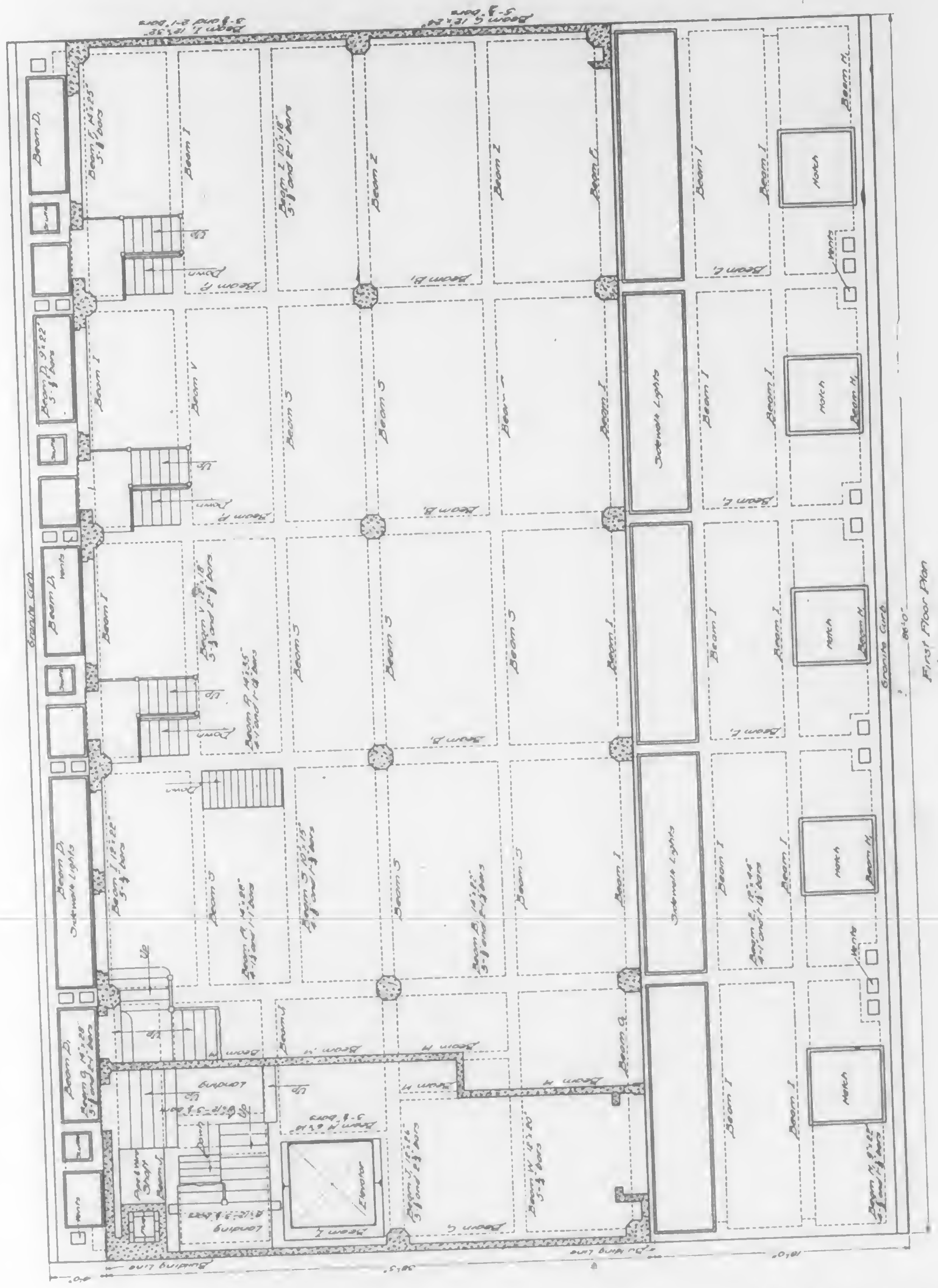
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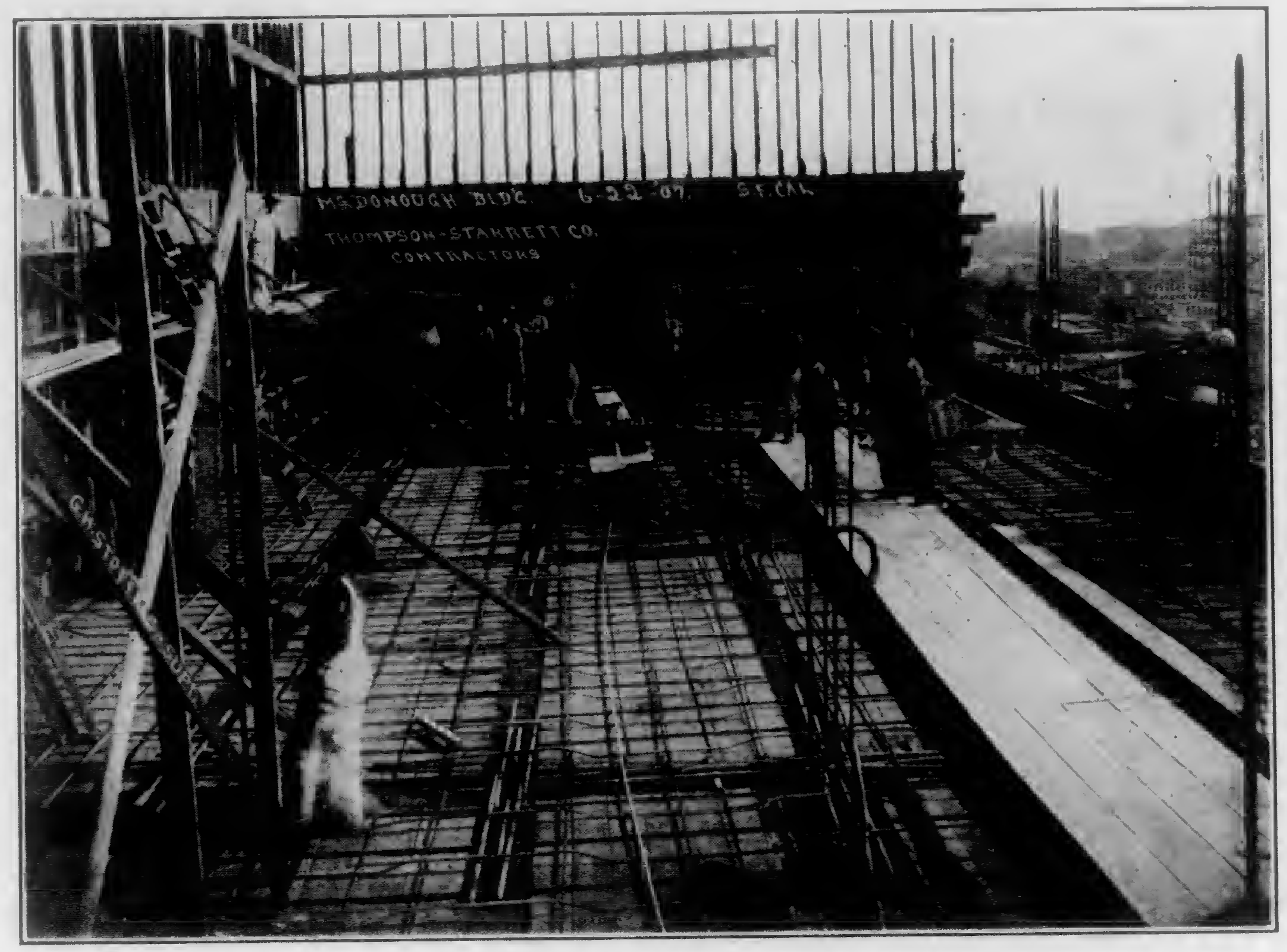
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William Curlett, Architect *John B. Leonard, Engineer*

Approximately 200,000 feet of lumber were used for form work in the entire structure. That portion of the concrete next to the forms became soaked and did not set as rapidly as expected. It became necessary to keep the forms in place for 28 days, which required the use of five sets of forms, one story being completed each week. In some cases, after the lapse of 28 days, the removal of the forms disclosed more or less green concrete. This explanation is given with view to accounting for the rather abnormal amount of timber for forms used. All beams were made one-quarter inch less in width at the bottom than at the top, with the idea of facilitating the removal of the forms. It is claimed, however, that this detail renders little or no assistance as far as the removal of the timber is concerned, but in the particular case at hand, the



The Macdonough Building, San Francisco
Partial View of the Seventh Floor, Showing Steel Bars in Position

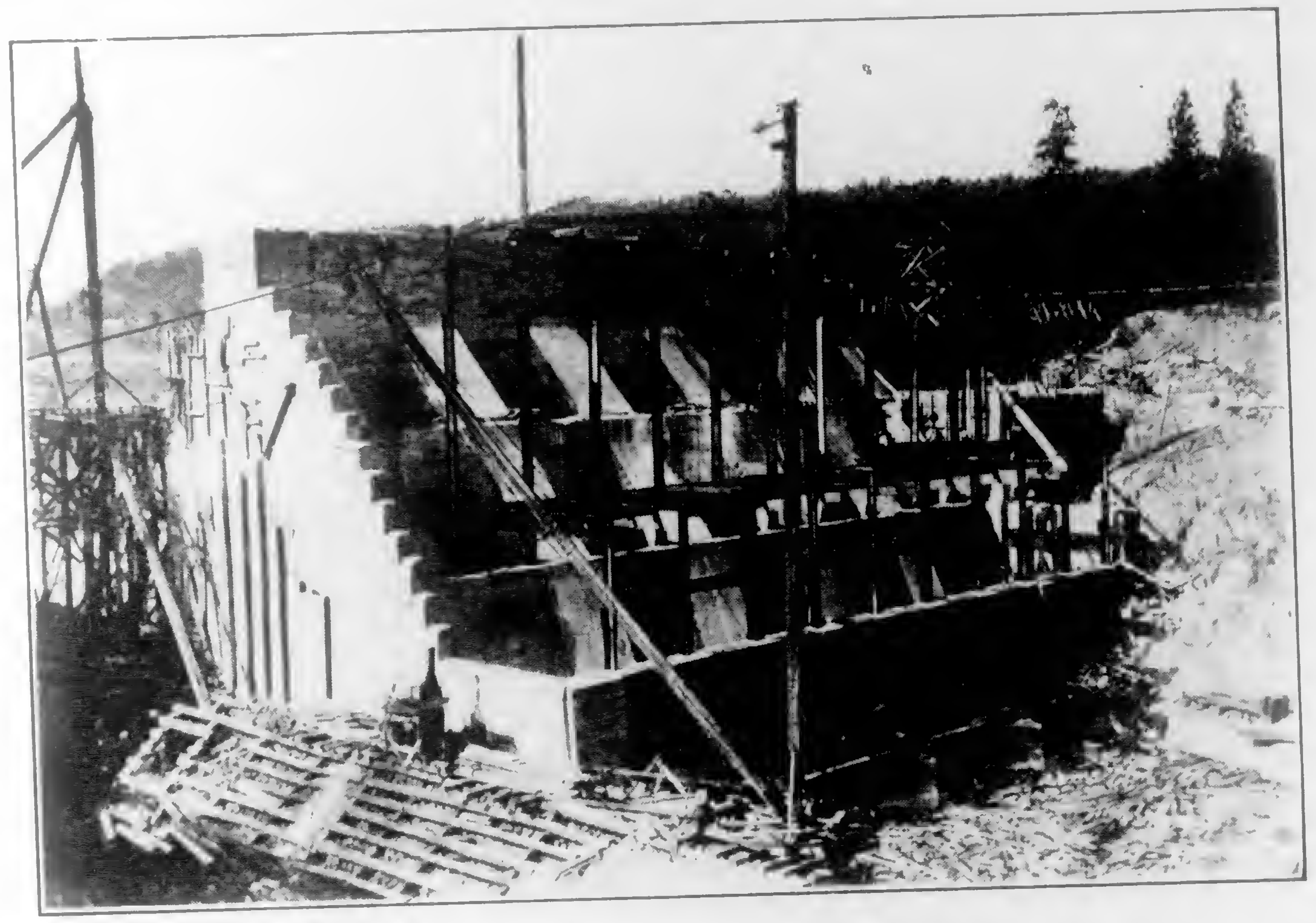
timber was in such sizes as to require this detail, regardless of any assistance it might render in the stripping. The lumber for all beams was surfaced on one side. For the slabs and columns one-inch material was used, and two-inch for the remainder, all of Oregon pine.

Carpenters were paid $5.00 per day of eight hours.

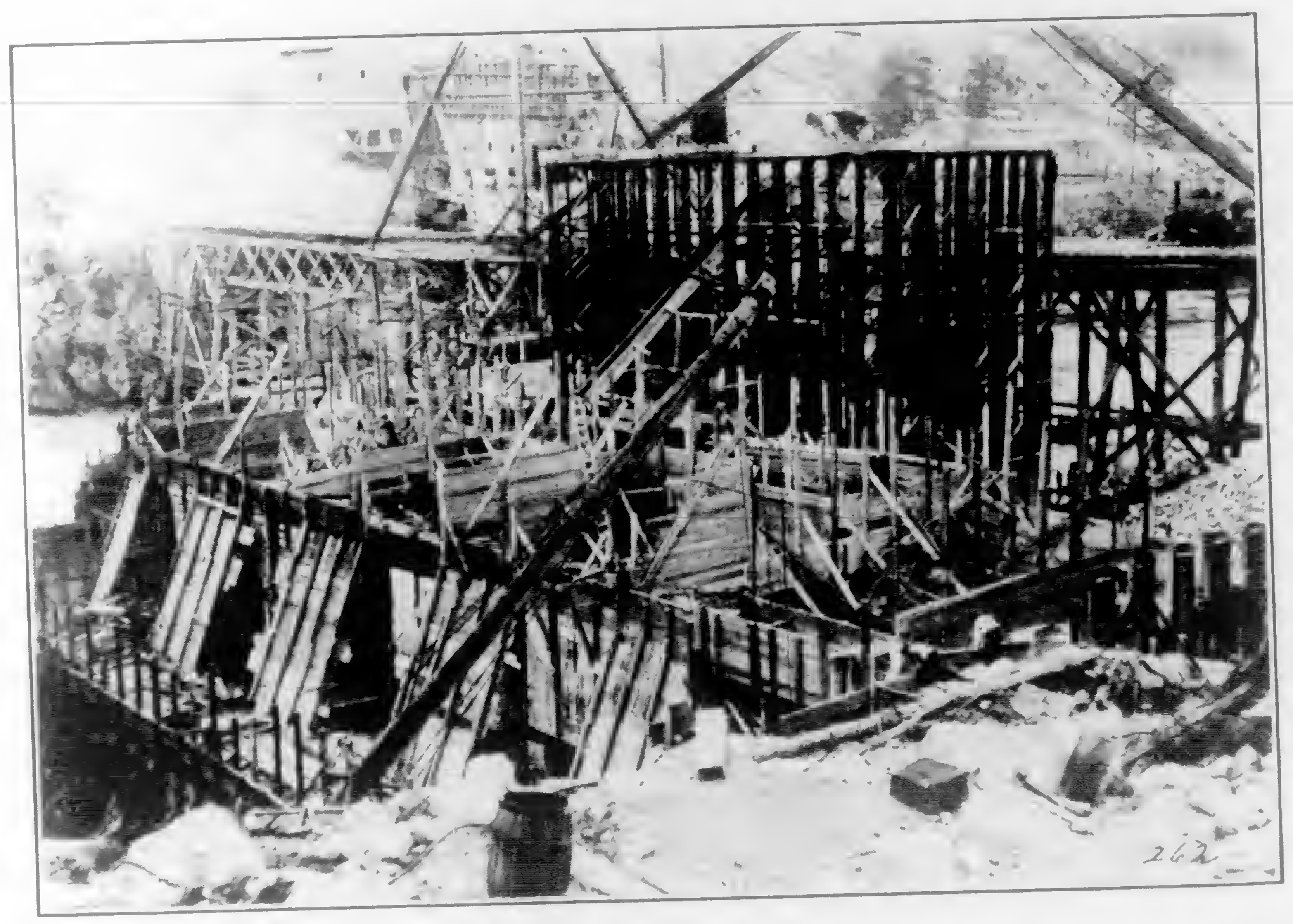
As stated elsewhere, the two sides on the lot lines are surfaced with cement mortar, three-quarter inch thick. The front and rear are finished with materials, the composition and character of which are unknown to the writer. It appears that marble dust, cement, and sand have been used and with much success. The result is a pleasing white enamel-like finish. In the interior, suspended ceilings are used and columns and walls are finished in plaster throughout, one-half inch thick on the columns. Wire, No. 10 gauge galvanized, on three feet centers suspended from the floor is used to carry the ceiling.

Excavation for the building was started on January 31, 1907, and the foundations were completed March 12, 1907. After the completion of the first floor and the mezzanine, one floor was finished each week, the fire wall and pent house being completed July 3rd, making about five months for the structural part of the building. This portion of the work was built at an approximate cost of $49,000, not including the surfacing of the floors. The basis of the contract for the erection of the building was the cost plus a percentage scheme. William Curlett was the architect, John B. Leonard the engineer, and the Thompson-Starrett Co., contractors. The contractors' superintendent on the job was George H. Stoffels.

The real estate firm of Baldwin & Howell were the agents for the owner. After a thorough investigation of the various types of structures in which Mr. Baldwin took particular interest, the owners accepted their agents' advice in adopting reinforced concrete construction.



Progress Work on the New Power Plant and Dam, Spokane and Inland Railroad
Sanderson and Porter, Engineers. F. N. Sylvester; Contractor



Progress Work on the New Power Plant of the Spokane and Inland Railroad; to Cost $1,000,000
Sanderson and Porter, Engineers

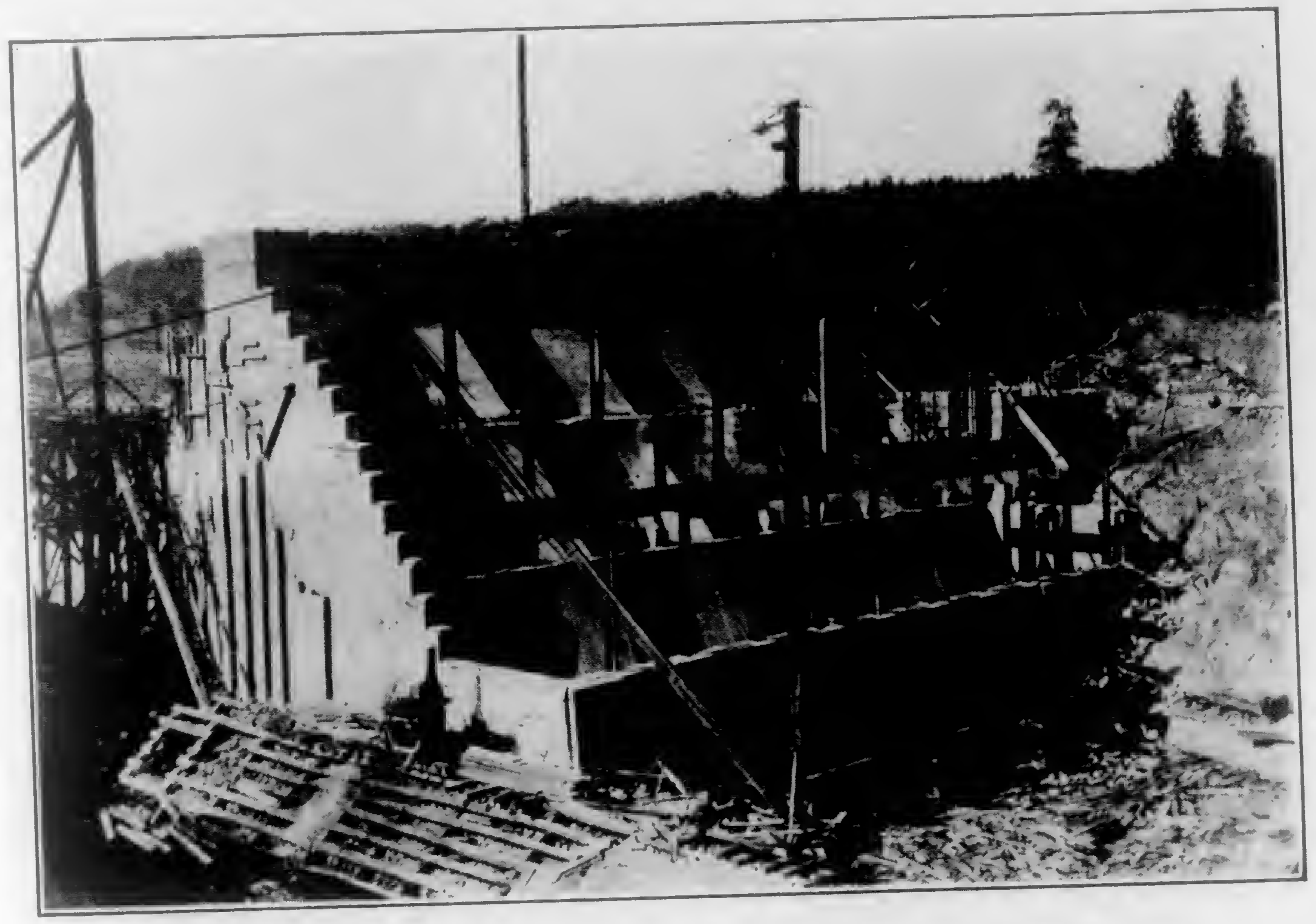
Efflorescence on Concrete

EFFLORESCENCE is the term applied to the whitish or yellowish accumulations which often appear on concrete surfaces. "Whitewash" is another name given to these blotches. Efflorescence is due to certain salts leaching out of the concrete and accumulating into thin layers where the water evaporates on the surface. These salts are most probably sulphates of calcium and magnesium, both of which are contained in many cements and both of which are slightly soluble in water. Efflorescence is very erratic in its appearance. Some concretes never exhibit it; in some it may not appear for several years and in others it shows soon after construction and may appear in great quantities. The most effective way to prevent efflorescence would naturally be to use cements entirely free from sulphates, chlorides or whatever other soluble salts are the cause of the phenomenon, but the likelihood of engineers resorting to the trouble of such selection except in rare instances is not great, even if they know what cements to select, so that other means must be sought.

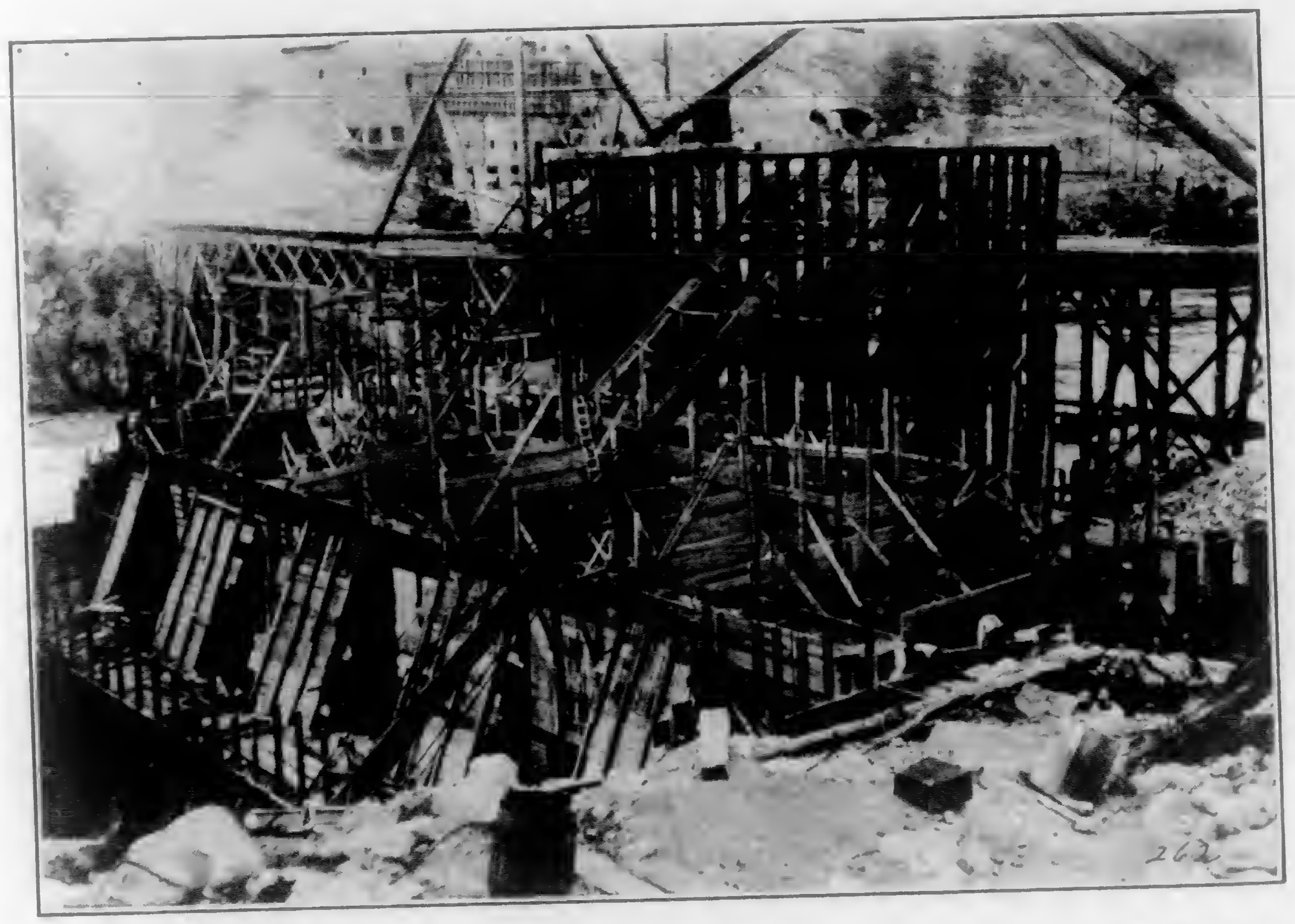
The most common place for efflorescence to appear in walls is at the horizontal junction of two days' work or where a coping is placed after the main body of the wall has been completed. The reason of this seems to be that the salt solutions seep down through the concrete until they strike the nearly impervious film of cement that forms on the top surface of the old concrete before the new is added and then they follow along this impervious film to the face of the wall. It has been suggested that this cause might be remedied by ending the day's work by a layer whose top has a slight slope down toward the rear of the wall or perhaps by placing all the concrete in similarly sloping layers. Mr. C. H. Cartlidge is authority for the statement that this leaching at joints can be largely done away with by the simple process of washing the top surface of concrete which has been allowed to set over night by scrubbing it with wire brushes in conjunction with thorough flushing with a hose.

But efflorescence frequently appears on the faces of walls built without construction joints and in which a wet concrete is puddled in and not tamped in layers, and here other means are obviously essential. Waterproofing the surface of the wall should be effective so long as the waterproofing lasts; indeed, one of the claims made for some of these waterproofing compounds is that efflorescence is prevented. Failing in any or all of these methods of preventing efflorescence the engineer must resort to remedial measures. The saline coating must be scraped or chipped or, better, washed away with acids.

Efflorescence was removed from a concrete bridge at Washington, D. C., by using hydrochloric (muriatic) acid and common scrubbing brushes; 30 gallons of acid and 36 scrubbing brushes were used to clean 250 sq. yds. of concrete. The acid was diluted with 4 or 5 parts water to 1 of acid; and water constantly played with a hose on the concrete while being cleaned to prevent penetration of the acid. One house-front cleaner and 5 laborers were employed and the total cost was $150, or 60 cts. per square yard. This high cost was due to the difficulty of cleaning the balustrades. It is thought that the cost of cleaning the spandrels and the wing walls did not exceed 20 cts. per square yard. The cleaning was perfectly satisfactory. An experiment was made with wire brushes without acid, but the cost was $2.40 per square yard. The flour removed by the wire brushes was found by analysis to be silicate of lime. Acetic acid was tried in place of muriatic, but required more scrubbing.—Engineering-Contracting. ing.



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A Mystery Unveiled

MANY persons have admired the painting on the proscenium arch of the Herald Square theater, but if any one should take the trouble to inquire who the artist was he would find no answer to his question. The contractor who had charge of the redecorating of the theater some four years ago doesn't know the name of the man, nor do any of his fellow workmen. The painters were at work when a middle-aged man, who was strolling down Broadway, stopped to watch them. He stepped inside and asked for the boss painter.

"Don't you want something nice over that arch?" he asked.

"Yes. Are you a painter by trade?"

"That's my business," replied the stranger, "and I think I could do a nice picture up there if you'll let me. If you don't like it you can paint it out and not pay me anything."

"All right," replied the boss. "We pay $4 a day. When can you go to work?"

"Tomorrow morning," replied the stranger, and he was as good as his word. Equipped with white overalls, he was on the job the next morning, and in two days he had finished one of the prettiest pieces of decorative painting to be found in any New York theater. Then he asked for his $8, got it and went his way, refusing the boss painter's offer of a steady job.

A few days ago several artists were sitting in an uptown cafe when one of them told this story. "I was the painter," he added. He was Charles L. Whipple, the portrait painter, who gets anywhere from $5000 up for every piece of work he does. "It was the cheapest job I ever did," he added, "and I have the satisfaction of knowing I can always get a job if I need one."—N. Y. Globe.

* * *

A "Frog Stool" of Concrete

THE most remarkable piece of concrete in the country, is the big "frog stool" band stand just completed by the ladies of the Wednesday Morning Musicale, in a park at Nashville. The free band concerts given at the park during the summer demonstrated the need of something of this kind which explains the generosity of the musical club in presenting this unique structure to the public.



The band stand, as shown in the illustration, is built entirely of reinforced concrete. The umbrella is thirty-two feet in diameter and the enormous weight rests only on the center pillow, which extends into the ground eight feet. Solid steel bars are fastened in a block of timber at the base of the pillow.



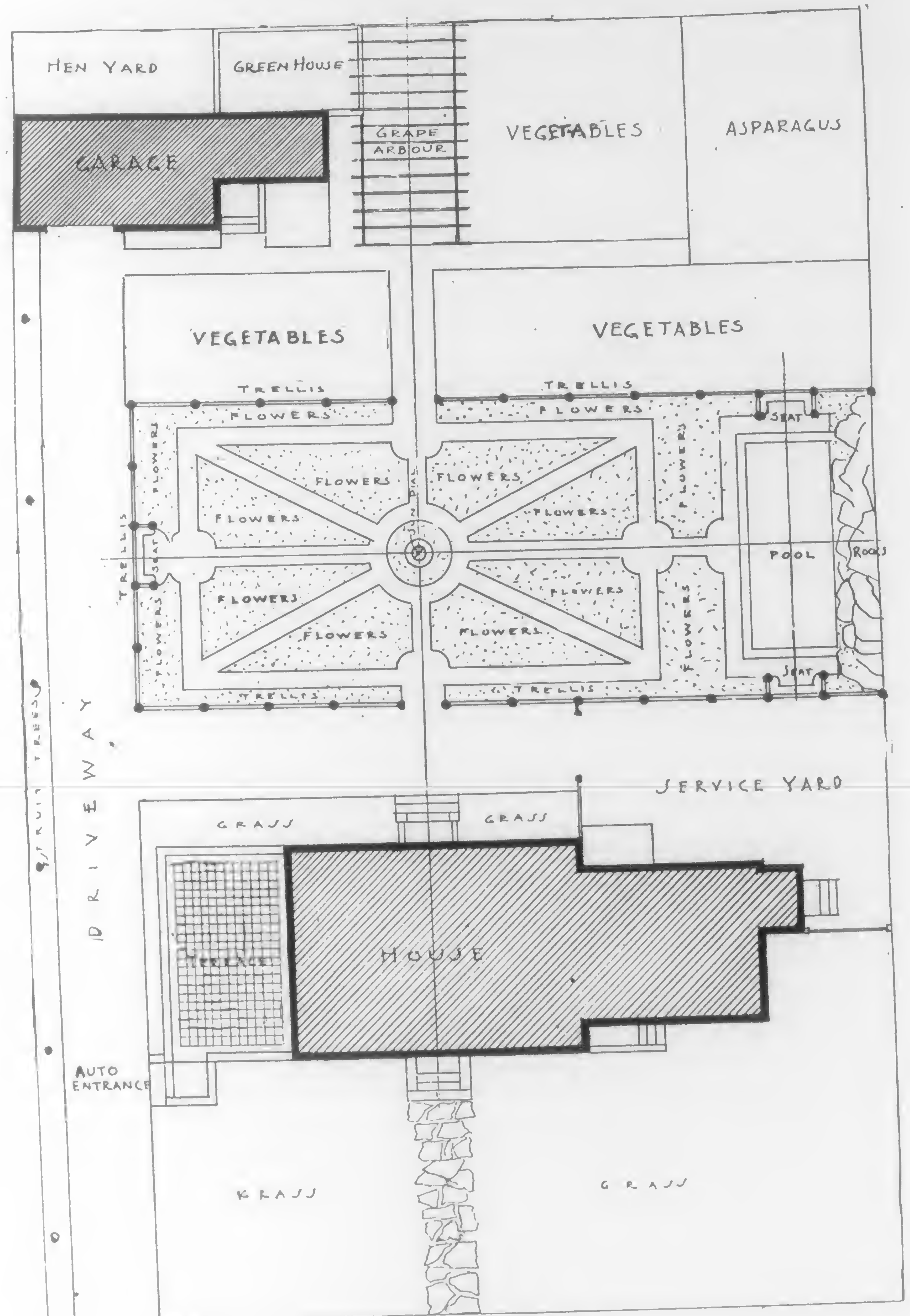
House For Dr. G. E. Hall. Newton. Mass.
H. W. Morton, Architect

What $7,500 will do in Building a Fire-proof House

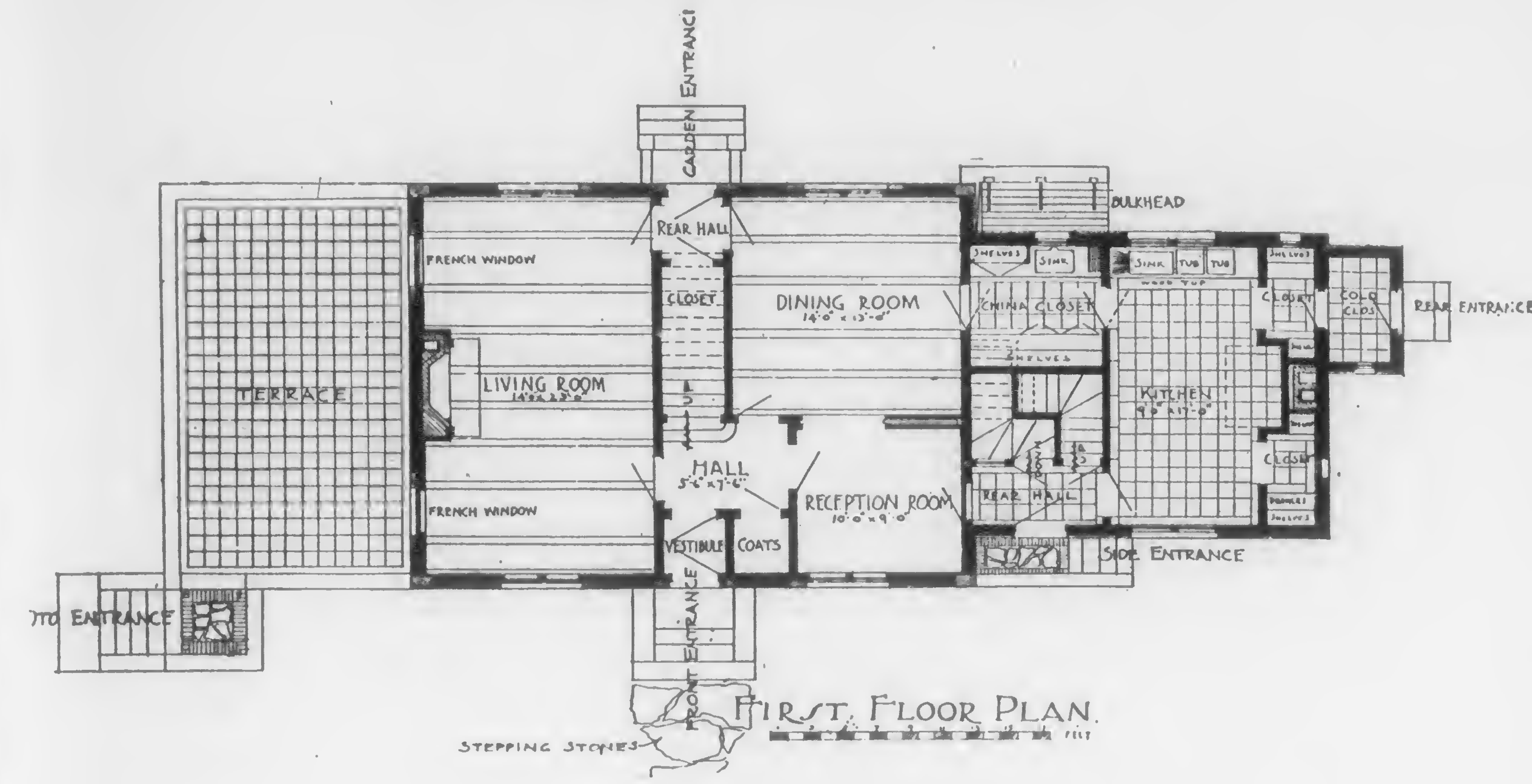
By ALEX. WARREN, in The Brickbuilder

WHILE riding through the country the other day in the auto with some friends, we had occasion to cut through a small side street, and found there a strikingly different house from anything I had seen in many a day. It was of the French chateau type, but of very simple design, as the owner was a man of moderate income and did not wish to incur much expense. It was built so as to require the least possible care and expenditure in repairs in the future, so the architect had chosen the hollow terra cotta block type of construction, which gave a wall about eight inches thick, plastered on the outside with Portland cement mortar, very roughcast, and flush with the trimming stone on the buildings. The inside plaster was put directly on to the blocks, so that there was not the least chance for mice, etc., to communicate to the upper part of the house.

On entering the house—by invitation of the owner, Dr. Hall—from the terrace, we went into the living-room, which was paneled four or five feet high with oak wainscoting and plastered above and papered. The ceiling in this room, in fact in several other rooms in the main part of the house in the first floor, were plastered between rough beams with one coat of rough finish plaster, tinted to the shades as required to match the finish of the room. The red brick mantel, with its wrought iron crane, added to the charm of the room, especially as the brick were selected to imitate the very old bricks, the same as found in some of the oldest houses, with rounded edges and very much discolored. This



House for Dr. G. E. Hall
H. W. Morton, Architect

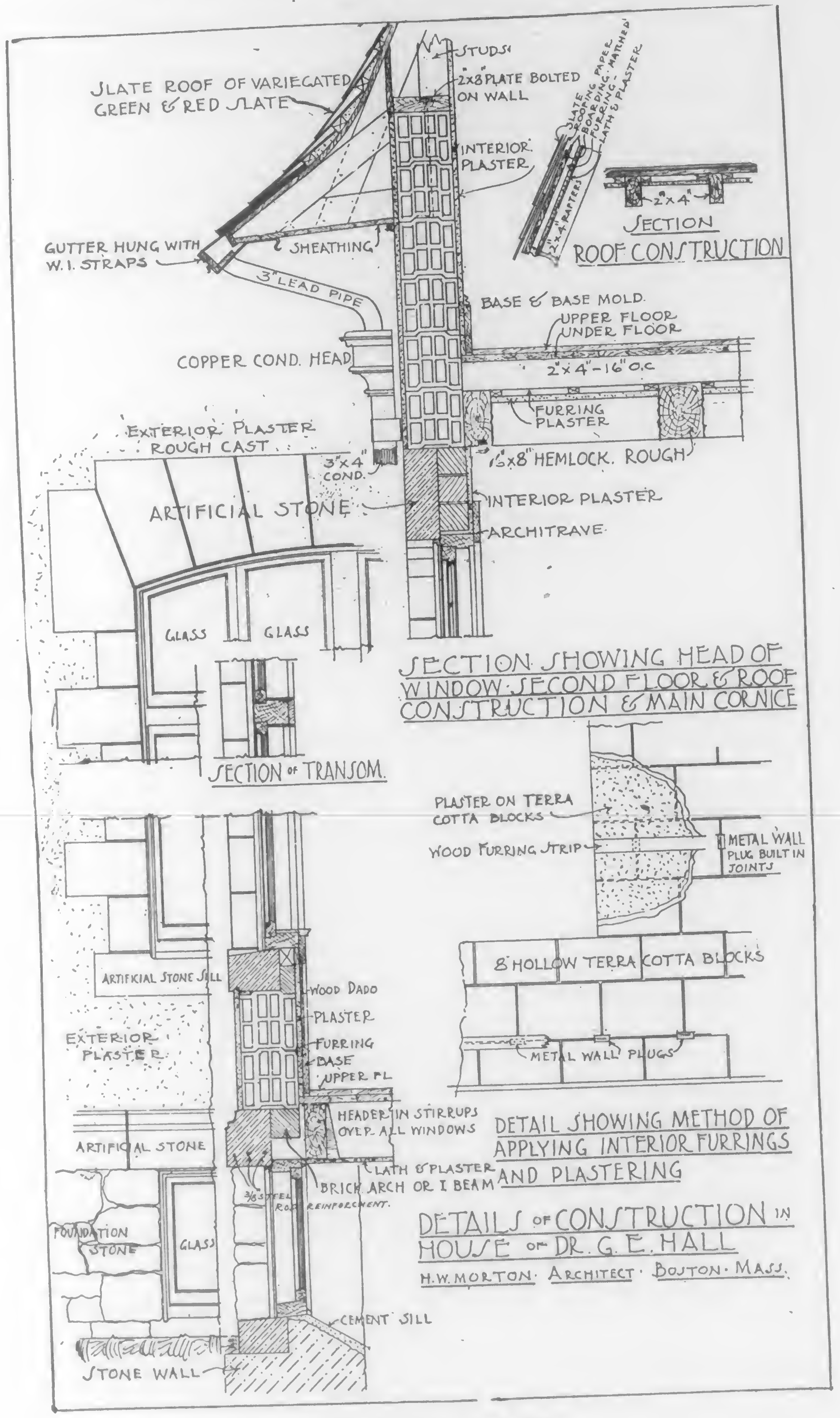


living-room had four very large French windows in it, two of them going out into the terrace at the side of the house, the other two overlooking the front and rear. Between the living-room and the reception room was a small hall finished the same as the living-room, with a coat closet and a door to the vestibule on one side and the stairs to the upper story on the other side. Dr. Hall said that the reason it was so small was that he considered it unnecessary to have a large hall when he had such a reception room and a large living-room. The reception room was finished in wood lattice, stained green, over lilac design wall paper, in panels, with trellis effect, all round the room and on the ceiling.

The dining-room was of natural oak finish, with the same style ceiling as in the living-room, and with a simple board dado about two feet high. The china closet, kitchen, kitchen closets and what was called the cold closet, also the rear hall, had a floor made of square clay tiles, chosen for variegation and color effects and laid with a very small joint. One reason for this was that there was no cellar under this part of the house, and therefore it was laid on a bed of concrete, which made it warm in winter and cool in summer, and at the same time perfectly sanitary, lasting and fireproof.

The recess in which the stove was set was covered over with a galvanized iron hood leading to a vent register in the back to keep the odors from broiling, etc., from getting into the main part of the house. The cold closet back of the kitchen, and separated by a kitchen closet, held the refrigerator on one side and a screen closet on the other side, and so designed that the window in winter could be opened, thus saving the expense of ice. The walls of this cold closet, as well as those of the entire first story of the house, were of the eight-inch terra cotta tile of a special design, and so made as to have no through joints in which water might work, either vertically or horizontally.

One pleasing thing was a blind door between the reception room and the rear hall, so made that when the lattice work in the reception room was put on, the joint was absolutely hidden, and as no hardware of any kind showed in the room the door was perfectly secreted.



House For Dr. G. E. Hall
H. W. Morton, Architect

The second story was filled with good sized, cool, well lighted bedrooms with large closets wherever possible. The linen closet was fitted with drop shelves and drawers, and the wood was of red cedar so it could be used for storage of winter goods in the summer time to protect from the moths. The bathroom had the regular fixtures and a large tub fitted with a ring shower, also a wood floor and a tile dado to about five feet in height. On the third story was a most interesting room which was used for a play room at the present time for the children, but so designed as to be easily made into a billiard room or divided into two bedrooms. All the rafters of the roof were shown, and between these a filling of rough plaster had been used. I noticed that the construction was very light, that is, of very small size timbers, and was told that this had been used for two reasons: One to save in expense and the other that it was all that was necessary, as the roof was so steep and high that it was practically a vertical load. Each rafter was trussed at the upper part of the room, and a niche at the opposite end of the room to the stairs had a delightful large fireplace of red brick, which made the room very interesting. All the woodwork had been stained brown and the plastering tinted slightly off of the white so as not to have too sharp a contrast. The roof of the main house and kitchen part was covered with variegated red and green slate laid in wavy lines of different sizes and thicknesses, and was different from anything I had seen in a long time.

On going down to the first floor again we went through the living-room and out of the garden entrance across the service driveway to the flowergarden, which was enclosed in a high trellis in simple design and painted white, and over which were growing crimson ramblers. Inside this trellis was a beautiful Italian garden, with its seats and paths, and in the center a sundial. At one end of the garden was the lily pool of cement, with a large rockery at the back of it in which were hardy ferns and vines. Seats at each end of the pool added to the delightfulness. Beyond the flower garden and at the rear of the place was the vegetable garden.

A small garage of the same type of construction as the house had been built in one corner, with space in the upper part for a man to live in, and back of the garage a large hen yard and a greenhouse. The stable and greenhouse were heated from the same source.

* * *

When to Stop Advertising

An English journal requested a number of its largest advertisers to give their opinions concerning the best time to stop advertising, and the follow- replies were received:

"When you would rather have your own way and fall than to take advice and win."

"When you stop making fortunes right in your sight solely through the direct use of the mighty agent."

"When you forget the words of the shrewdest and most successful men concerning the main cause of their prosperity."

"When the population ceases to multiply and the generations that crowd on after you and never heard of you stop coming on."

"When you have convinced everybody whose life will touch yours that you have better goods and lower prices than they can get anywhere else."

"When younger and fresher houses in your lines quit starting up, and stop using the newspapers in telling the people how much better they can do for them than you can."

The Competition "Ghost" in America

By F. W. FITZPATRICK, Consulting-Architect

THE article in the October Architect and Engineer of California on the "Competition 'Ghost'," quoted from the British Builders' Journal, was very interesting to me, as that same article (or parts thereof) has been fired at me by "kind friends" and critics ever since its first appearance. Indeed, some of our home journals have had things to say, comments to make, in which the British "ghost" has been compared with the American "Consulting-Architect."

I don't know how many consulting-architects there are in the country, but I do know that I was the first one to establish that form of practice, as a legitimate and full-fledged profession, this side of the water, and as dean of that profession, it is probably "up to" me to make some answer, to take some notice of the aforesaid article.

As far as the name goes it matters little to me, and I suppose not much more to my confreres, whether we be called "ghosts" or any other pet name that it may please our ethical critics to devise or borrow. A word, however, as to our practice and the ethics we have established may not be amiss, and I would ask the indulgence of and a little space in the Architect and Engineer while I paint a little pen-picture of the new profession that has stirred the ire and spleen of a considerable number of the "regulars."

Apparently in England the "ghost" is a much despised and mysterious individual who works in secret places and supplies the talentless with the proper ammunition with which to go out and gather glory and shekels. His services are awfully underpaid; he is generally a man who couldn't possibly make a living as a practicing-architect; a draftsman in distress and one who in order to be kept straight has to be locked up while he is doing some particular piece of work! Altogether, he may be sized up as something rather despicable, a cross between a private detective and what is termed here a "fence." So much for the English "ghost." At this distance and from that description, given in the English technical journals, he is not a pleasant personality to contemplate and certainly his position in society not such as to make us green with envy.

There may be "ghosts" in America, but I am hanged if I can see where this description fits a "consulting-architect" or any reason for some of our English cousins and some jocular friends in our own country coupling the two names and chuckling most inordinately at the result of their stupendous wit.

For the benefit of those architects and others interested in building who have not yet had dealings with a consulting-architect, I will briefly describe my own practice that, I am sure, is in no way different from that of my confrères. There is nothing mysterious or hidden or underhand in my connection with practicing-architects. By training, force of circumstances and perhaps exceptional opportunities, I have acquired certain skill and wide experience in particular branches of architectural work; I have associated with me distinguished specialists in other branches, structural-engineering, heating, ventilation and all those other details of building. We are not "draftsman out of a job" or men who cannot practice our several branches or all of architecture in the usual and commonplace way, but we have selected this manner of doing it because it is more pleasing, gives us an indefinitely wider range to operate in and is more remunerative by far. Our services, like those of the "legitimate" practitioner, are at the disposal of anyone who has legitimate business to offer and the wherewithal to pay for the service.

There are mighty few architects in the country who can afford to maintain a full corps of high-class specialists regularly and permanently. This organization gives them that class of assistance and just when they need it and they are paying for that and nothing more. One architect can and does design very cleverly, but feels a bit shaky about construction, or, as I say, cannot afford to keep on his staff a high-priced structural engineer. We take his plans and arrange his structural work for him. For another it is the heating and for another, all the mechanical branches. Still another may be a good and careful superintendent whom people are anxious to have carry on their work, but who realizes himself that he is deficient artistically. For him we will make just as good a design as we know how.

And why not? What is there unethical in him or in me in that transaction? How many architects, big or little, can or do absolutely make the designs for which they receive the credit? Now, gentlemen, don't all sing out at once. The anxiety of the profession to rise as one man, red in the face and loudly proclaiming "I do," makes one think of the nursery when it becomes a question of who stole the jam.

There are some very able men in the ranks of the practicing brethren who can design superbly and whose knowledge of construction is all-comprehending, but who, for the life of them cannot present a design in popular, pictorial and attractive form. Their drawings are all right technically and can be interpreted by the craftsman but are unintelligible to the layman. What is such an architect to do to be thoroughly ethical? Must he abstain from having a consulting-architect or other artist-colorist put his drawings into such language, I might say, as will be understood by people who cannot read a plan, but who can understand a photograph-like representation of the completed structure? This one matter of perspective, pictorial delineation is rather interesting. How little of it is really properly done and how few there are who can do it may be appreciated when I say that it is conceded by experts that in all this vast country of ours there are just seven men who can do it at all well. Bar out the so-called "ghosts" from that number and you have a mighty few left.

In competitions, perhaps there is more ghostliness because, forsooth, like the despised Englishman I do take a lot of that kind of work on a contingent fee. A competition comes up in some town, an important building. A local man is invited to compete. His friends are many, his standing good and he knows that if he can submit a clever design he has excellent chances of winning out. He comes to me with a proposition. We go into the thing on a silent partnership basis. I make him pay so much, just enough to cover my expenses in that work, whether we lose or win—otherwise every blessed architect in the country would be wanting me to go into every competition with him! Then if we win out I have a contingent fee of so much or such a share in all the profits that accrue. Meanwhile he has the advantage of consultation with, and assistance of all my associated specialists and myself all during the continuance of the work. What is there wrong about it? Are such partnerships (silent as to name, granted) barred by business ethics or morals? If architecture were practiced as in olden times and as is done yet in a limited way in England, as an art, something quite personal, where all that was done was the handiwork of the master spirit, it would be another matter. Or if as in the law, the leading talent, the high cockolorum, has to personally present the case, or the physician who is the whole thing and must be seen by each patient, it would be different; but architecture today is a business. People employ an architect solely to obtain results, and it is not a question with them or with him as to how those results be gotten or whether they be personally conducted or otherwise. The architect is expected to produce certain things and if he can do that production better by dealing with me or some other consulting-architect than he can by his own efforts, then is he not only helping himself but very greatly benefiting his clients.

We don't go into any one competition with several competitors. No man can successfully compete with himself or do justice to two or more in any such affair. With the competitors' knowledge and consent, however, I have supplied as many as seven of them with copies of rough studies showing the solution of the problem I would present were I competing. This simply gave each one more information about the nature of the building than he got from the program and a nucleus about which to work up his own ideas. But I have been intensely amused in every case where this has been done to hear the judges express very great surprise at the wonderful similarity there was in so many of the plans submitted!

The writer of the article referred to in the English journal says that: "In spite of all that has been done toward putting down the "ghost" system, the Royal Institute of British Architects would be surprised to know the names of some of the Fellows and Associates who have taken the part of "ghosts" or acted as employers of them, the latter including some of the most respected and best architects of the last quarter of the century." Well, perhaps in that regard there is some similarity, for people certainly would be surprised to see the names on my books, big guns and little guns. Some of the big guns come to me for the rough studies of a problem that they probably take to their own high-class experts the next day to show them how they must design such and such a building, these sketches purporting to have been made by them in the solitude of their study by the light of the midnight lamp! Howbeit, that's none of my business and of course I have to be more or less of a father confessor. Everything that I hear or that is written to me is absolutely privileged and treated as confidential but, nevertheless and notwithstanding, I can't help but be amused at times.

It would also surprise many architects to know how many owners there are who believe in and use a consulting-architect. Plans and specifications are sent to me from all over the country for revision, suggestions and approval before the actual work of construction is begun. And in that connection I would say that it is really surprising to see how little, apparently, the average practicing-architect knows about cost, for in the past six months fully 80 per cent of the plans so submitted to me could not possibly be executed for anywhere near the amount of the estimate. In a recent case of a large court-house the appropriation made was $450,000. The committee sent me their accepted plans and were astonished when I told them what they might expect, but just as a test they put the work out for bids and the lowest figure that came in was for over $900,000.

The work is fascinating, interesting in the extreme, enough so that it would keep me in this comparatively new profession even if there were not so many other charms about it. Naturally one only gets the very best, the cream of what is going on. Even the smallest practicing-architect can do the cheapest work brought to him in his own office. He cannot afford and there is no incentive for him to take the little house or the cheap factory to a consulting-architect. It is only the unusual problems that he gets to solve, the bigger, more important buildings that he is afraid to handle alone, the troublesome questions, the knotty, involved and complicated phases of building, of design, of construction, that he will carry to a consulting-architect. And so with his more important brother, the bigger gun in the profession. His own staff is probably busy with a lot of already gotten work. But a competition comes up, he would like to go into it, he hates to take his own people off of their tasks, but there is the consulting-architect, thoroughly equipped to carry on that work better and at less cost than he could do it in his own office, and he is not slow to realize it and to profit by it. So that, as I say, we get the best and most fascinating work, and from Canada and from Mexico, and from New York to San Francisco.

Notes on the Forty-First Convention of the A. I. A.

By LIONEL DEANE, A. A. I. A.,

Delegate from San Francisco Chapter, American Institute of Architects

PRELIMINARY to attending the convention, we had, for a much needed rest, taken a rather extended vacation, visiting the principal cities of the United States, from Portland, Oregon to Portland, Maine; also five Universities and Technical schools, examining their work and noting their methods.

We also had the pleasure of examining in detail, much of the earlier work of the older towns of New England; more particularly Portsmouth, New Hampshire; Newburyport and Salem in Massachusetts.

Having viewed freshly the work of many of the Delegates, and weighed its quality ere meeting them, we are more inclined to report personal impressions rather than a detailed description of the proceedings of the convention.

We will endeavor to do in as simple a manner as possible.

The first general impression was one of bigness. Bigness, not in the numerical strength, nor in stature, but the mental quality that can only be defined by that term. A bigness that seemed to pervade everything, and most fittingly finds its best expression in the chair, for certainly Mr. Frank Miles Day is one of the best presiding officers that it has ever been our pleasure to sit under. The tact and skill with which he held every subject under discussion in rein, was a constant source of admiration.

The surroundings too, lent dignity to the proceedings. The Art Institute, while not the last word in Architecture, and lacking the dignity and directness of either Mr. Atwoods' Field Columbian building or Mr. Cass Gilberts' delightful gift to St. Louis, is, as those things go, a reasonably imposing structure.

While Fullerton Memorial Hall was admirably suited for the occasion, and the Architectural background of Blackstone Hall, with its magnificent assemblage of re-productions of Twelfth to Fifteenth Century portals and other related Architectural objects, was a fitting background for the Lucullun feast that terminated the proceedings.

While not being in a position to say from experience, we have been assured by many who attended the convention, that it was the biggest, broadest and most in keeping with its name, that has been held in many years.

Looking over the assemblage, one would be forced to cry with Maude Adams, in "Peter Pan", "I am Youth, Youth, Youth eternal", for while the dials of earth might show that the individuals had length of days, their mentality gave lie to the finger of time.

It may have been said in the past, that there was a feeling that the average Institute member must be kept in swadling clouts, else would he do himself, and possibly others, damage. That he was not to be trusted with self government, and that a few divinely endowed individuals, were especially appointed their brothers' keeper.

During the past year the Board of Directors, taking cognizance of that feeling, had endeavored to correct same in their report, and only spasmodic evidence of that feeling cropped out.

The Committee appointed to examine the report of the Board of Directors, Mr. Wm. S. Eames being Chairman, brought in a most radical series of recommendations, looking to a remedy of that condition, endeavoring to revise the By-Laws to meet modern requirements.

But, as their report was illy digested and cumbersome, it was referred to the new Board of Directors with instructions to take immediate action.

This we hope will quell any feeling of unrest that may exist; as looking over the personel of the men, who have been for years at the helm, we feel that they are admirably fitted to carry on the work entrusted to them, and, except for the manner of their selection, could not be improved upon. We feel that the Institute is, and has been in the right hands, and no permanent good would come from scattering the positions of responsibility merely to suit geographic requirements. For instance, a man on the Board of Directors, residing on the Pacific Coast, would have to lose a a fortnight's valuable time to attend a meeting, or else be derelict in the trust imposed upon him.

The vast territory covered by the Institute creates a situation which calls for the utmost skill in handling, and would have a tendency to break down that insular provincialism, in what Bernard Shaw calls, and with some sense of fitness, "A Nation of Villages".

In reading his article thereon, while on our way home to San Francisco, the disagreeable accuracy of some of his statements came home to us.

While we are loath to admit it, to a person breathing the vast pure air of the Pacific Coast, his heart expanding as he views our magnificent distances, basking in our glorious sunshine, and rubbing up against his fellow man, who is subject to the same environment, the knitting school methods of some of the older communities is oppressive.

We must not imagine, however, that we are different from our fellow man in other places, for when he is given a like opportunity to expand, he frequently shows up as well or better than ourselves.

And now to give a summary of the proceedings.

On Monday evening, November 18th, a reception was held in the rotunda of the Art Institute, which was a fitting introduction to the Convention.

After due time had been allowed for introductions and promenading through the various halls, filled with treasures of the art world, the delegates and their ladies, together with members of the Illinois Chapter, A. I. A., and invited guests, adjourned to Fullerton Hall, to listen to the various addresses and exercises. After which an adjournment was made till ten a. m., Tuesday, when the Institute began its real work. Here the reports of the various officers and committees were presented and referred to special committees for digestion. Many of them being so voluminous as to take up more than the allotted time of the Convention, if read in total, and showed much thought and time expended on their preparation, as well as unselfishness, on the part of busy men, that deserves the highest encomiums. Some of the reports of the more improtant committees were read and evoked discussion.

Of particular merit were the papers of the committees on:

"Education and Publication," Mr. Ralph Adams Cram, Chairman.

"Applied Arts and Sciences," Mr. Irving K. Pond, Chairman.

"Competitions," Mr. R. Clipston Sturges, Chairman.

"Schedule of Charges," Mr. Edgar V. Seeler, Chairman.

"Signing Buildings, and Using Institute Initials," Mr. Frank H. Quimby, Chairman.

And a very exhaustive and interesting paper on the "Metric System," by I. de Coppet Bergh, which we hope will lay at rest for all time, as far as the architectural profession is concerned, that much vexed question, as to whether we shall employ that arbitrary and non-popular measure; which does not accomplish any better results than the one in use for ages, by the major portion of the civilized peoples of the world.

The "Schedule of Charges," was one that evoked considerable discussion.

Many varied interests in various portions of the Union had to be considered.

The difficulty of providing a uniform scale that would suit all conditions confronting the Convention.

Mr. Seeler had worked intelligently and conscientiously to fuse these diverse interests, and is entitled to much praise for his efforts. But he would be indeed a wonderful man, who could accomplish the task undertaken, and today, after a calm review of the work accomplished, we fail to see any material advancement in clarity and simplicity of expression or directness over the old schedule, and it will be the province of the Board of Directors to clear the atmosphere.

The Schedule, as it at present stands, is so vague that, as frequently happens, if it should be used in Court, as a matter of evidence, we fear that it would prove of negative value to the member of the architectural profession presenting it.

The report of the committee on "Education and Publication," read by Mr. Ralph Adams Cram, was a masterly plea for a higher standard of preliminary instruction, preparatory to entering the lists as a practitioner, and is one to be commended. Yet there is always the fear of overtraining in that direction, and that in the mere pursuit of scholarship, the main issue will be clouded. To us a gentleman should not, as a dancer, achieve that degree of perfection, that he is liable to be mistaken for an exponent of that art, nor make such few mistakes in his grammatical construction as to be mistaken for a pedagogue. And, as we are on nodding terms with several tongues, we feel that the dogmatic statement that a knowledge of Latin, together with the several modern modes of speech (while a consummation to be desired), was an absolute pre-requisite for a career. Which to us is the

"Divine insanity of noble minds
Which never falters or abates,
But labors and endures and waits
Till all that it foresees it finds,
And what it cannot find, creates,"

is going a trifle beyond the present scope of the Architectural Profession.

The reason we allude to this is, as we said in the beginning, we have visited several schools, and found in some a tendency to sandpaper the individuality out of the neophyte sitting at the feet of Wisdom. In discussion with members of other professions on that subject, we have found the same condition of affairs in relation to their particular lines of life.

In our position as a member of the California State Board of Architecture, we have had an opportunity to note the results of the various schools, not only of America, but of the whole world on their graduates, and therefore should have a larger horizon than the average practitioner, whose vision naturally turns to his "Alma Mater," and is concentered thereon. The natural tendency to cultivate exotic growths rather than virile herbage has been noted, and we, of this land and age, instead of the simple culture of Greece, seem to be striving for the florescence of Rome.

In the report of the Committee on "Competitions," Mr. R. Clipston Sturges brought in a well thought-out paper, which, with but little amendation was adopted. The gist thereof was to provide a meeting ground for architects and their prospective clients, where all would feel that justice would be meted out.

Mr. Quimby's report on signing buildings and using initials was an eminently proper one and the members of the Institute were urged to do so, when by so doing they would reflect credit both on the Institute and themselves.

There were a number of able reports, but it seems to us that these were the ones that made the most impression on the Convention.

The form of election of officers was gone through with, and the report of the Committee on the election of Fellows, Corresponding and Honorary Members was adopted without comment. Toward the end of the session the Convention, apparently struck by senility, reverted back to its methods of other days, and a motion was made that a new office should be created, to honor three men, one of whom only was mentioned, the other two being anonymous, and strange as it may seem, legislation of that character, in spite of vigorous protest, was swallowed by the Convention, looking at its watches, preparing to dress for dinner, and sluggish from its past efforts. Mr. Cass Gilbert was elected President for the ensuing year.

There were a number of papers read during the intervals of the Convention, some of which were illustrated with lantern slides, while in others there were "demonstrations."

Except for the paper of Dr. Allerton S. Cushman, none seemed to throw new light on the subject discussed. Dr. Cushman's paper on the Corrosion of Steel was a timely subject and one of great interest to the architectural profession, dealing as we are in such an intimate manner with this subject. It was exhaustive and full of meat, and we hope that it will be placed in such form as to be in reach of every member of the Institute.

After listening to Mr. F. W. Baldwins' paper in as far as we could see, the Tetrahedral System of Construction is not of much service to the architectural profession.

The Illinois Chapter was indefatigable in its efforts to entertain the members of the convention and their friends, and too much praise cannot be bestowed on them.

We feel that the delegates returned to their various homes satisfied that they had accomplished considerable that will be of use to the Architectural profession—even if much is yet to be desired.

* * *

Color

By A. W. REIBER

IF WE take up the study of interior decoration, it is necessary also to know something of the origin and nature of color and color harmony and contrast. The use of proper color in furnishing is as necessary as good form and line in design.

If we study historic ornament and design in all its different and varied stages we find also in each case its corresponding scheme of color.

As the Louis XVI style of design is composed of delicate line and dainty coloring, so is the striking design and bright coloring characteristic of the Oriental rug.

We might consider color as a natural sensation much the same as we would consider the sensation of sound. We know that if a note of music is struck, we put into vibration air waves which in turn affect the ear drum, thus producing the sensation of sound.

If a number of notes are struck and they are the right ones, we produce a harmony of sound. If there is no ear present there would be no sound.

Thus in the same way the analyzation of light rays gives us the sensation of color and where there is no light there is no color.

If we analyze a ray of sunshine we find there the colors of the spectrum, in other words, the primary colors.

And it is the knowledge of the handling of these colors in the productions of shades and hues and tones which enables us to make perfect and artistic harmonies and contrasts.

We find in the ancient period of ornament and decoration the extensive use of the primary colors, red, yellow and blue.

The early Egyptians used these colors in addition to green, black and white in lavish quantities.

The interiors of that time presented a dark and gloomy appearance and for this reason it was necessary to use bright and vivid colorings to counteract this gloom, and also that the decoration might stand out in proper proportion and not fade into insignificance.

So we, in this latter day, adapt the use of color in proper proportions to our conditions and surroundings. Color is one of the most important factors in the proper furnishing of the home.

Each room should have its individual color scheme and in order to make an artistic and lasting effect a number of things must be taken into consideration.

The use of each room, the amount of light available in each, and the relation of one room to another are all questions of greatest importance. The rooms of a house vary in position, thus we find some rooms deficient in sunlight while others have an abundance of light.

The wall treatment should supply the deficiency in the dark or colder rooms, and the wall in the light room should neutralize conditions in it.

Take for instance, the rooms in the modern home. In the dining room, living room or library, where heavy woodwork is used, and heavy furniture is necessary, we will find it requires the use of heavier design in coloring, while in the drawing room, or reception room, or parlor, where furniture of lighter and more delicate line is used, the design and coloring should also be more delicate to correspond.

Mention mahogany to some people and they immediately come to the conclusion that green is the proper thing to use for a decorative color scheme because it is a contrasting color.

Or, on the other hand, talk about the darker shades of oak and the conclusion is reached that red is the proper thing.

The decorator who has the ability to assemble the proper articles and has the knowledge of the use and value of color at his command is in a far better position to benefit the public at large than the man who does nothing but copy historic and period styles, for work that is strictly right in period style is not often appreciated. Or, in a great many cases, an interior which has been carried out strictly right as to decoration is spoiled by the introduction of furniture or other articles which are out of place therein.

The color to be selected for a room is not always that which contrasts best with the woodwork, but take into consideration the combination of colors which when properly put together will make the most harmonious and liveable interior, and which will show individuality and style which is not common.

In building, decorating and furnishing, one definite purpose is essential and that purpose always

"One Harmonious Whole."

* * *

A church that will be the largest and most novel in this country is to be built in Cleveland, Ohio, by John D. Rockefeller. The edifice is to stand on the present site of the Euclid Avenue Baptist Church, the Rockefeller place of worship, and will bear the name of the present structure. It will be 16 stories high, and will be institutional in character, having gymnasiums, lecture rooms, rooms for clubs and societies for men and women.

The New Wall Papers

A NEW YORK exchange has the following concerning this year's wall paper show.

All the wall paper manufacturers, who annually come from different parts of the country to show the advance samples of their new season's lines, in August, said that this year's show was the most successful ever held. The jobbers all seem to anticipate a busy season, and the entire force of every manufacturer was kept hustling during the entire two weeks of the show, turning over the sample books and in assisting the customers to make their selections. The season was shorter than usual, many of the manufacturers remaining only a week or ten days, instead of the customary two or three weeks, but in this shorter time they transacted more than the usual volume of business. This fact made it more than usually difficult for the man who was not buying goods to see the lines, because there was very little time when the books were idle.

"As a general thing, the coming season's wall papers are a decided advance artistically over those of past seasons. The coloring is better, the designs are better drawn, and there is an evident appreciation of the great advance that has been made in public taste and an effort to keep up with it. Of course, many of the designs show the influence of the best foreign papers, and many papers are shown which are to a greater or less extent reproductions of imported wall papers or cretonnes that have passed the critical judgment of the exacting decorators. But, while these foreign models have been freely used, both for direct imitation and also to serve as motives for original designs, there are still many very fine designs that are purely American, and which use native plants or other ideas adapted from American suggestions.

"While a number of new things were shown, there were no striking novelties, such as the elastic friezes or the designs extending the entire height of the room that were presented a year or so ago for the first time. The novelties are rather in the nature of new methods of printing or new kinds of stock used as the foundation or new background effects. In one case, there is a line of papers printed with colors produced by a new process, which are claimed to resist the fading action of the sunlight and to retain their original color. But this is rather an improvement in manufacturing processes than a novel decorative treatment.

"The needs of the high class decorator have been catered to very extensively, and practically every manufacturer shows many papers that are capable of being used for cut-out and other original effects. Nor are these confined to the more expensive goods, but excellent decorative papers, including independent sidewalls, fabric effects for paneling and for two-thirds treatments, are shown even in blanks and flats. There are also an abundance of decorations, from simple narrow binders to architectural and other treatments with which the more elaborate decorative effects can be produced.

"Nursery papers seem to be a favorite theme this year, quite a number of really excellent designs being offered. Of course, the popular Teddy Bear has been utilized by many of the designers in producing these papers, which at best can have but a limited use. Nearly all the manufacturers also shown a goodly number of pictorial friezes, some of them being used as regular borders to inexpensive blanks. Hence there will be no lack of opportunity for the decorator of original ideas to produce truly novel and artistic effects, even at low prices."

Among the Architects

American Institute of Architects

(ORGANIZED 1857)

OFFICERS FOR 1907:

President.....................*Frank M. Day, Philadelphia, Pa.
First Vice-President........*William B. Mundie, Chicago, Ill.
Second Vice-President......R. Clipston Sturgis, New York.
Secretary and Treasurer..*Glenn Brown, Washington, D. C.
Auditor for Two Years.....Robert Stead, Washington, D. C.

Board of Directors for 1907

For Three Years—Walter Cook, New York; Edgar V. Seeler, Philadelphia; J. L. Mauran, St. Louis, Mo.

For Two Years—Alfred Stone, Providence, R. I.; Irving K. Pond, Chicago, Ill.; Ralph Adams Cram, Boston, Mass.

For One Year—W. A. Boring, New York; J. M. Donaldson, Detroit; Merritt J. Reid, San Francisco.

*Executive Committee.

Next Convention at Chicago, Illinois

San Francisco Chapter of American Institute of Architects

President.............................Albert Pissis
Vice-President.....................William Mooser
Secretary-Treasurer....Sylvain Schnaittacher
Trustees......................Henry A. Schulze, William Curlett

Southern California Chapter.

Officers for 1907-1908.

President...................Carroll H. Brown
Vice-President............................Myron Hunt
Treasurer................August Wackerbarth
Secretary ....Ferdinand Parmentier

Board of Directors

A. F. Rosenheim, Octavius Morgan, J. Lee-Burton

State Board of Architecture

President..................Henry A. Schulze
Secretary-Treasurer..............Lionel Deane
Asst. Secretary-Treasurer.....Fred H. Roehrig

NORTHERN DISTRICT.

President..................Henry A. Schulze
Secretary-Treasurer..............Lionel Deane
Trustees..........................Wm. Curlett, Clinton Day

SOUTHERN DISTRICT.

President.....................John P. Krempel
Secretary-Treasurer..........Fred H. Roehrig
Trustees...................Octavus Morgan, Sumner P. Hunt, Wm. S. Hebbard

Open Oakland Office

John Parkinson and Edwin Bergstrom, architects, announce the opening of offices in Oakland. Mr. Joseph Norris has been placed in charge of the office which is at 520 Central Bank building. This same firm also has offices in the Union Trust building, Los Angeles and the Linz building, Dallas, Texas.

Takes Vacation

C. W. Dickey, architect, of Oakland, has been renewing old acquaintances and incidentally taking a well earned rest at his old home in Honolulu. Among the notable buildings which Mr. Dickey designed the past year were the Oakland Bank of Savings and the Claremont Hotel in Berkeley.

Julius Krafft Busy

One of the busiest architects in San Francisco since the fire is Julius Krafft & Sons with offices in the Grant building. Among the buildings either finished or now under way by this firm are the following: Bullock and Jones building, Sutter and Kearny streets; Mercedes building for the William Wilson Company and costing $125,000; the Gashwiler apartment house at Jones and Ellis streets; the Hoeckle apartments at Eddy and Leavenworth streets; six-story building on East street for the William Wilson Company; the Sahlein building at Polk and Bush streets and a handsome $16,000 residence, just started, in San Mateo for L. D. Macdonald of the Macdonald Lumber Company of San Francisco.

San Diego School Plans

In response to the notice sent out by the San Diego board of education, for plans of a school building thirteen firms of architects responded. At a meeting of the board each architect was allowed fifteen minutes in which to explain his drawings. Before examining the plans the board required the architect to state that he would waive any rights to com-

pensation, provided, bids could not be obtained in accordance with his estimate.

The following architects submitted designs, together with estimates of cost:

Harrison Albright, $90,000 for a building 202 by 85 feet, to be built of either concrete or brick at the pleasure of the board.

F. S. Allen, $89,000 for a building 166 by 93 feet, of concrete with hardwood floors; $82,000 with concrete floors; $75,000, pressed brick; $72,000, brick; $63,000, wooden frame.

J. C. Austin, $85,000 to $87,000 for a building 188 by 129, of pressed brick.

C. H. Blackman, $90,000 for a building 256 by 192 feet, of pressed brick; $88,500 for the same construction, but different plan.

Bixby & White Co., $84,000 for a concrete building.

J. M. Bramlett, $88,000 for a building 214 by 73 feet, of brick with stone facings; $77,000 for concrete; $70,000 for pressed brick; $63,000 for common brick.

B. W. S. Clark, $85,000 for a building of brick with stone trimmings.

Henry L. Gay, $90,000 for a building 180 by 70 feet, of selected brick.

H. W. Glidden, $89,850 for a building of brick.

William Hebbard, $83,200 to $89,600, for a building of common selected brick with artifical stone trimmings.

Edward Quayle, $89,000 for building 197 by 90 feet, of common brick with cement blocks to water tables.

San Diego Construction Co., $82,000 for a building 215 by 92 feet, of reinforced concrete; $79,000 for common brick.

L. B. Valk Architectural Co., $84,500 for a building of brick and cement.

Architect Austin's Plans Accepted

The plans submitted by Architect John C. Austin of Los Angeles for the proposed school building to be erected at Twelfth and E streets, San Diego, were adopted by the board of education of that city at their last meeting. Eleven ballots were taken to decide the question, the board being divided on the plans of the successful architect and those of Harrison Albright.

The successful design is classic and Doric in style. The building is U-shaped, two stories and basement and is estimated to cost between $85,000 and $87,000.

On the ground floor there will be ten class rooms and a kindergarten room. On the second floor there will be eight class rooms and an auditorium to seat 510. The basement will be used for the manual training rooms, cooking room, bicycle rooms, lavatories and heating apparatus.

Great Concrete Arches

Spokane, Wash.—If the plans of Mayor C. Herbert Moore, the board of public works and Professor Burr, consulting engineer, are carried out, Spokane will have the longest concrete arch in the world, being 750 feet in length or 517 feet longer than the Walnut Lane bridge, which measures 233 feet. Professor Burr announces plans in preparation for the new bridge crossing the Spokane river, at the foot of the Spokane falls at Monroe street, where is developed 16,000 of the 50,000 horsepower electrical energy available, call for two arches, each 750 feet in length, and it is expected that before the close of 1910 this city will have in the heart of its business district the climax in the construction of the most extended concrete arches in the world.

Outing of Architects and Engineers

The Architects and Engineers Association of Los Angeles held a field day last month. The members were conveyed by electric cars over the Pacific Electric railway to Redondo, where the immense electric power station was inspected, after which dinner was enjoyed at the Hotel Redondo. An attractive after-dinner discussion of various subjects was indulged in by selected speakers. Representatives of the Edison Electric Company, Los Angeles Gas and Electric Company and Pacific Light and Power Company discussed "The Present Installation and Prospective Extensions of Electric Lighting and Power Service," and R. H. Manahan talked on "Municipal Supervision and Inspection."

The program committee was composed of Amos A. Fries, chairman; George P. Robinson and Theodore A. Eisen.

The president of the association, J. B. Lippincott, and Secretary Harry Z. Osborne, Jr., also contributed largely to the welfare of the members and guests.

Hotel Company Exempt

Superior Judge C. D. Wilbur of Los Angeles has rendered a decision in the case of Bovay vs. the Long Beach Hotel company, for damages by reason of personal injuries received in the collapse of a portion of the Bixby hotel in Long Beach last year, while it was in course of construction.

The theory upon which the several suits were brought is that the owner of the building was responsible for certain defects and insufficiencies, which, it is alleged, existed in the architect's plans, and which were the proximate cause of the accident. The defense set

up was that the plans were not defective, that even if they were the collapse was not due to any defect in the plans, and further that an owner is not responsible for defects in plans prepared by his architect, nor for the incompetency or negligence of the architect if he exercises reasonable care in the selection of such architect.

The building was being constructed under plans furnished the owner by Austin & Brown, architects, of Los Angeles. It is claimed by the plaintiff that the collapse was due to a defect in the plans of the architect, namely, that the columns supporting the second and third floors were inadequate to the burden placed upon them. In this connection it should be said that the plan of the building was altered during construction, by the addition of cement roof, adding about 24,396 pounds to the weight supported by each of the various columns of the building.

The defendant claims that the plans were not defective, and that the collapse was due to faulty construction by the contractor, in that the forms and supports used during construction were removed while the cement was too green, and in this connection point out the fact that the weight of the roof panel was supported by means of struts resting upon the cement floor underneath, which was only eighteen days old, and from which all temporary supports had been removed. Defendant's contention is that the collapse was brought about by the temporary supports of the roof punching through the green concrete of the fifth floor. The defendant introduced two lines of evidence in support of this theory; first, the testimony of witnesses who were at work in various portions of the building, some of whom were carried down in the collapse, and second, by eye-witnesses who saw the collapse from the outside of the building. The testimony of these witnesses would indicate that the first evidence of collapse was a sharp crash, followed by a marked sagging of the roof, followed by a pause, sufficiently long to permit some men who were standing upon the sagging portion to walk off, then with a loud crash the recently poured roof gave way and went downward, striking floor after floor, carrying each floor with it in its progress.

The fixing of the responsibility for the disaster is peculiarly difficult, owing to the character of material used, cement, which when first mixed has absolutely no strength at all, and then gradually increases in strength from the time of the initial set until it has attained its maximum strength, which may be some months later. The question of temporary supports in the building, because of this fact, becomes of peculiar importance, and the duty to provide such supports and remove them at the proper time rested upon the contractor.

The columns on the third floor which are made the subject of attack by experts had been poured forty days at the time of the accident, and had gained seventy-five per cent. of their ultimate strength.

With reference to the testimony of the experts, the point on which they most seriously disagree is as to the effect of the reinforcing steel rods. One of the plaintiff's witnesses testified that they were a detriment to the building, and because of their existence he subtracted from the strength of the column not only the steel itself, but all the cement outside of the steel rods, claiming that the strength of a 10-by-10-inch column, reinforced by four steel rods with diagonal wire lacing was equivalent only to a cement column without reinforcement 7 by 7 inches. However, so far as it appears in the evidence, this is the only witness who took so extreme a view, but most of the witnesses for the plaintiff rejected the reinforcement as too light to be considered.

In summing up the judge referred to numerous decisions bearing on the question of liabilities and rendered his decision in accordance. In closing he said that the defendant was not liable unless he knew, or should have known, of the defects in the plans, and there is no evidence to indicate that they had any knowledge or suspicion or any reason to believe that the plans were defective.

The evidence shows that several columns in the building had been repaired by digging out thirty to thirty-six inches of the cement from the floor up, and replacing it with fresh concrete, while at the time of the collapse a column on the fourth floor was being repaired in that manner, and one of the witnesses testified that a few minutes before the collapse he noticed that the steel reinforcing of this column had bowed out, and the evidence shows that the giving of this column, though slight, tended to change the stresses and produce eccentric loading on the other columns and supports.

The evidence in this case has not induced such a conviction in my mind as would justify a judgment based upon the proposition that the collapse was proximately caused by a defect in the plans. Judgment and findings therefore must be for the defendant, inasmuch as the evidence does not preponderate in favor of the plaintiff—1835 Code Civil Procedure.

THE
Architect and Engineer
OF CALIFORNIA

Published Monthly in the interests of the Architects, Structural Engineers, Contractors and the Allied Trades of the Pacific Coast by the Architect and Engineer Company.

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NO FINANCIAL PANIC

It gives one a shudder to read some of the panic talk which is being indulged in for political and other purposes. But there is going to be no panic, and it is safe to say the worst has passed.

While the financial conditions have been exaggerated for manipulative and political purposes, there is no question that we are passing through a transitory period, under which there will be an adjustment of industrial conditions. The effect has been world wide and is by no means confined to America, much as the enemies of President Roosevelt may strive to make it appear.

There has been an unprecedented prosperity; an industrial prosperity which has never before been recorded in the history of the world. More money has been required to finance new industries, and there has been such a heavy investment of capital that it is now required that there be an adjustment to the new conditions.

One result of the money flurry will be a general readjustment of wages and simultaneously we may look for a perceptible reduction in the cost of living.

ARCHITECTS' NAMES

Much has been written about the apparent neglect of the daily newspapers to give architects credit for their work. The professional publications blame the daily press and attribute their seeming indifference to a disinclination to advertise the architect, unless he pays for the same. The explanation may fit some cases—certain publications that cater more to the owner's pocket-book than the paper's readers—but generally speaking, it is the fault of the architect himself if he fails to receive the prominence he deserves.

The writer personally knows of several instances where newspapers have sent a reporter to an architect for information about buildings which he had designed. The scribe found the architect unwilling to supply the desired information, and consequently he had to seek other channels for facts. When the article appeared, the architect's name was conspicious by its absence. Had the architect been a little more accommodating the reporter would have gone out of his way to make him prominent in the story. True, architects must protect themselves as well as their clients, who oftentimes are averse to any publicity being given their plans, but it is useless to try and keep such news from the press, once a reporter has been given a "tip", and the best thing the architect can do is to communicate with his client and with his knowledge let the papers have the facts.

A daily paper classes the architect with other professional men and would as willingly mention his name and title as the physician or clergyman. We reiterate: no one is more to blame than the architect himself for the tendency to keep the latter's name out of the newspapers. The time is coming when the appearance of the architect's name in connection with any mention of the building he has designed will be as natural and common as the use of an author's name above or beneath the story or book he has written. But the architect must "come off his high perch," to use a homely but forceful expression, before this can be brought about. And he will, too.

OUR NATIONAL WASTEFULNESS

The Geological Survey is sending out some most timely and important bulletins. It recently issued a warning to the people in regard to the indiscriminate and unscientific use of reinforced concrete in building; one of its latest bulletins calls attention to our wastefulness in deforestration, it shows that we allow more timber to be destroyed every year by preventable forest fires than is used in all the lumber industries; it reiterates the fact that there is more coal left and lost in the ground, by reckless processes of mining, than is taken out, and that at the very most we and our descendants have only coal enough left for less than 100 years.

The size of our country and its enormous natural resources have led us to believe that many things were inexhaustible that on the contrary are being utterly and ruthlessly wasted at a most extravagant and foolish rate, and our people have developed habits of prodigality that spell ultimate national bankruptcy. In fires, for instance, we have gotten so that we really expect and plan for terrific losses. As an example, Washington's record has just been completed and there were 470 alarms of fire in the year resulting in damage of only $250,000. It is one of the lowest and most satisfactory records attained by any city in the land, yet our fires have inflicted a damage, small as we believe it to be, just 350 per cent greater than that suffered by the average of sixteen European cities of equal size.

Incidentally, all the fire adjustment and the other accompaniments of the San Francisco disaster have been tabulated and arranged and it now transpires that what was supposed to be a total damage of about $350,000,000 amounts to much nearer $600,000,000. Only $200,000,000 can be properly charged up to insurance and, therefore, the country has suffered a total wiping out of existence, an obliteration of property, to the amount of $400,000,000 by that one fire. A matter worthy of our most serious consideration and firm resolve to build so as to make impossible the recurrence of such an awful conflagration, a recurrence that is imminently possible now in several cities, notably New Orleans, Boston and Philadelphia.

The Publisher's Corner

Waterproofing for Concrete and Brick Buildings

The C. I. Waterproofing Company, with an office at 1397 Broadway, Oakland, was given the contract for waterproofing the fine six-story bank and office building of the Oakland Bank of Savings, C. W. Dickey, architect. The compound can be mixed with the cement for waterproofing concrete buildings or can be applied to the outside as in the case of brick and stone buildings. C. I. Waterproofing is guaranteed to keep out the wet and dampness. As this is strictly a local industry there is an inclination on the part of architects and contractors to use its product and those who have done so say they are entirely satisfied with the results. The company is planning to open a San Francisco office.

Mangrum & Otter

Mangrum & Otter of San Francisco have built a large warehouse which has relieved the congestion of their Mission street quarters quite materially. The company has enjoyed phenomenal success since the fire, due in a measure to its early appearance in business immediately following the conflagration and to the hustling qualities of its president, Mr. Mangrum, and Secretary Charles C. Hanley. Heating systems have been installed by the concern in many of the new buildings erected in San Francisco the past year and contracts have been taken to equip other buildings sufficient in number to keep the company busy all next year. The concern reports a good demand for its mantles and tile supplies.

Mason's Safety Tread

The Mason Safety Tread is much in demand by architects and owners of new buildings in San Francisco. The tread is specified by architects for business buildings, school houses, department and other stores, churches, railroad and street cars, hotels and factories. The San Francisco school department has voted to use the tread in all its new school houses. The tread is adapted for use upon outer or inner stairs of granite, marble, cement, slate, iron and wood; upon thresholds of doors and elevators, inclined passages, car and wagon steps, etc. It is fireproof, cleanly, neat in appearance, noiseless and protects a step to the extreme front edge. The San Francisco representative of the Mason Safety Tread is Oren A. Giles, of 131 Buchanan street, and a postal card addressed to him will result in a prompt call.

Advertising Agency Enlarges Scope

M. L. Hadley, who for eighteen years has successfully conducted the largest advertising agency on the Pacific Coast, has leased offices in the Merchants' Exchange building, and re-opened his San Francisco offices.

Speaking of the progress of the advertising agencies, Mr. Hadley said: "It was in 1890 that I started my agency. I was at that time, advertising manager for a prominent Oakland newspaper, and in making my rounds among advertisers I realized that the average advertiser had too little time to devote to his advertising, in order to secure the best results from the money expended, so I started an agency which has continuously grown, until today, I think I have more good accounts than any other concern in my line on the Coast.

"An advertising agency, to be successful, must make a continued success of its clients' advertising. This can be done only by buying space at its proper cost, using only the best mediums, and giving the advertiser a service in the preparation of the copy that truly represents the business advertised.

"My splendid business is, I believe, largely due to the economy which I invariably practice in purchasing mediums for my clients, and the close personal attention given to detail, and especially the standing of the various newspapers.

"In order that my clients may have the very best class of service in the preparation of their copy and follow-up methods, without which no advertising campaign is complete, I secured the association of Mr. Edgar M. Swasey, the best all-around ad-writer in the West, as manager of my service or copy department. Mr. Swasey has managed the advertising of many of the successful business houses in San Francisco, and is thoroughly familiar with advertising methods which have proven to be very profitable, consequently, he brings to my agency, added strength.

"For a great many years all of the principal accounts on this Coast have been placed through my agency and with present facilities for the production of effective copy, follow-up methods, and advertising literature, I expect my business will keep right on growing.

"The Architect and Engineer of California is one of the mediums I select for the use of my clients."

In Business for Himself

J. R. D. Mackenzie, who was with the Watson Roof Company, in charge of its Oakland office for some time, has gone into the roofing business for himself and has already taken a number of good contracts. Mr. Mackenzie is a roofer of long experience and he has the confidence of leading architects and contractors in northern California.

Central Electrical Company Busy

Manager L. R. Boynton of the Central Electrical Company, 185 Stevenson street, San Francisco, reports that his company has no cause to complain on account of the financial flurry. Several large buildings have been wired and others are now being equipped. The Fairmont hotel was wired by the Central Company and other contracts taken by Mr. Boynton are the wiring of the Head building, the Insurance building and the Crellin building.

Woods & Huddart

Woods & Huddart recently mailed to their clients an attractive announcement of their removal from Front street to the second floor in the new building at 356 Market street, the same location occupied by the firm before the fire. In the circular, announcement is made that plain and twisted bars for concrete reinforcement are carried in stock and can be delivered promptly to any section of the State. The company also handles structural steel fabricated ready for erection. The firm represents the American Bureau of Inspection and Tests and is prepared to pass on any kind of structural steel work.

Power and Heating Plant Installed

The Machinery and Electrical Company of Los Angeles has recently installed in the Los Angeles High School science building, a very complete power plant as well as a heating and ventilating plant. The power plant consists of two units Oil City Boiler Works high pressure boilers, 85 horse-power each, a Watertown 12x12 direct connected automatic engine direct driving, a 50 K. W. Western Electric Company's direct current generator; also a 6x6x6 steam driven Franklin air compressor and a full boiler room equipment of feed pumps, oil pumps, tanks, etc.

The heating and ventilating plant consists of one 9-foot Sturtevant cone wheel with full equipment of Sturtevant coils; one Sturtevant 120-inch steel plate blower, full-housed with full equipment of Sturtevant coils and a 120-inch Sturtevant exhauster. The system is regulated by the National Regulator Company's thermostatic system throughout.

The coils are drained by the Morehead return traps. All of the material named as being installed in this plant is handled by the Machinery & Electrical Company, who are exclusive agents for Southern California. The company is also entire Pacific Coast agents for the National Regulator Company's equipment.

The Pitcher Sliding Door

Architects and builders are taking very kindly to the new Pitcher Sliding Door hangers and sliding door frames and the Pacific Tank Company, the manufacturers, report an increasing demand for the goods. In every case where the hangers have been used, both architect and owner have expressed entire satisfaction with their operation and unhesitatingly have recommended their use. The Pitcher doors can be placed in the ordinary five and one-half inch wall with four-inch stud. The new system of sliding door is a vast improvement over the old swinging door, and it has been actually demonstrated that by discarding all of the swinging doors in the ordinary house more than twenty-five per cent can be saved in ground space. It is the only removable sliding door on the market. The pockets in the frame are air tight, which prevents all possibility of draught. The hangers are especially intended for hotels, apartment houses, flats and residences and are in use in many of the best buildings erected in San Francisco since the fire. Full size doors and frames in operation may be seen at 231 Berry street or 268 Market street, San Francisco. Orders, from out of town are given prompt attention.

Among the buildings recently equipped with the Pitcher sliding door hanger are the following: Clark residence, Frank Van Trees, architect; the Clinton apartment house, Jones and Washington streets, Armitage & Rowell, architects; Stewart Hotel, Geary, near Powell, Cunningham & Politeo, architects; hotel Eddy near Leavenworth; Lundy apartments, Stanyan street, C. J. Devlin, architect; The Alameda Building and Loan Building, Oakland, and a handsome residence now under construction at the corner of Broadway and Baker street, San Francisco.

Theater for Bakersfield

On a diminutive scale the city of Bakersfield is to have an open air theater which, though without comparison with the one at the University of California, nevertheless stands for the same purpose, namely, as a representation of ancient art as applied to modern conceptions of beauty as well as utility. The open-air theater at Bakersfield is to serve as an additional adornment to the park, which has been presented to that city by Truxton Beale.

It will be built in the form of an amphitheater, with a seating capacity of not over 250 people. The stage and wings are Pompeiian and very simple. The side walls and the floor will be of reinforced concrete throughout. The pit has been made quite ample for a large addition to the seating capacity and is enlivened by a central fountain. The design is by Architect Lewis P. Hobart, Crocker building, San Francisco.

Hunt, Eager & Burns

The Los Angeles firm of Hunt & Eager, architects, some of whose work shown in the in the November Architect and Engineer, caused much favorable comment from the profession, has been materially strengthened by the addition of a new member in the person of Mr. S. R. Burns, a former resident of Dayton, Ohio.

Mr. Burns has visited California periodically during the past twenty years, in fact, at the time the first buildings were being constructed at the Soldiers' Home, in Los Angeles county, he was the supervising architect of the work; as also of several other branches of the National Soldiers' Home. For twenty-five years he has practiced his profession in the East, where his firm gained a reputation for heavy construction work. For a number of years they were architects of various State institutions, schools and colleges, and many of these buildings were erected from their plans.

Mr. Burns goes to Los Angeles to stay. He has been granted a certificate by the State Board of Architecture, and will hereafter be one of the firm of Hunt, Eager & Burns.

Certificated Architects

California is one of the few States in the Union that requires an architect to pass an examination in order to practice his profession in this State.

In the southern district of the State, which comprises all that part of the State south of the northerly line of San Luis Obispo, Kern and San Bernardino counties, there are seventy-two architects who have been granted certificates. The following are the latest additions to the list: B. M. Morris, Albert Bryan and Silas R. Burns, Los Angeles, and L. T. Bushop, Pomona.

Charges Against Oakland Contractor

Stuffing of pay-rolls on the part of a contractor whereby a large amount of money was secured in addition to a heavy increase in commissions paid, is alleged by the Abbott Kinney company of the Venice of America, near Los Angeles, in a suit recently begun in the Superior Court against John Roberts. The charge is made that Roberts, while contracting to erect buildings for the plaintiffs in the Venice of America, forged the names of workmen until the difference amounted to $3,041.86 and an additional 10 per cent of this for commission. The suit was begun to recover these amounts from Roberts as a resident of Alameda county.

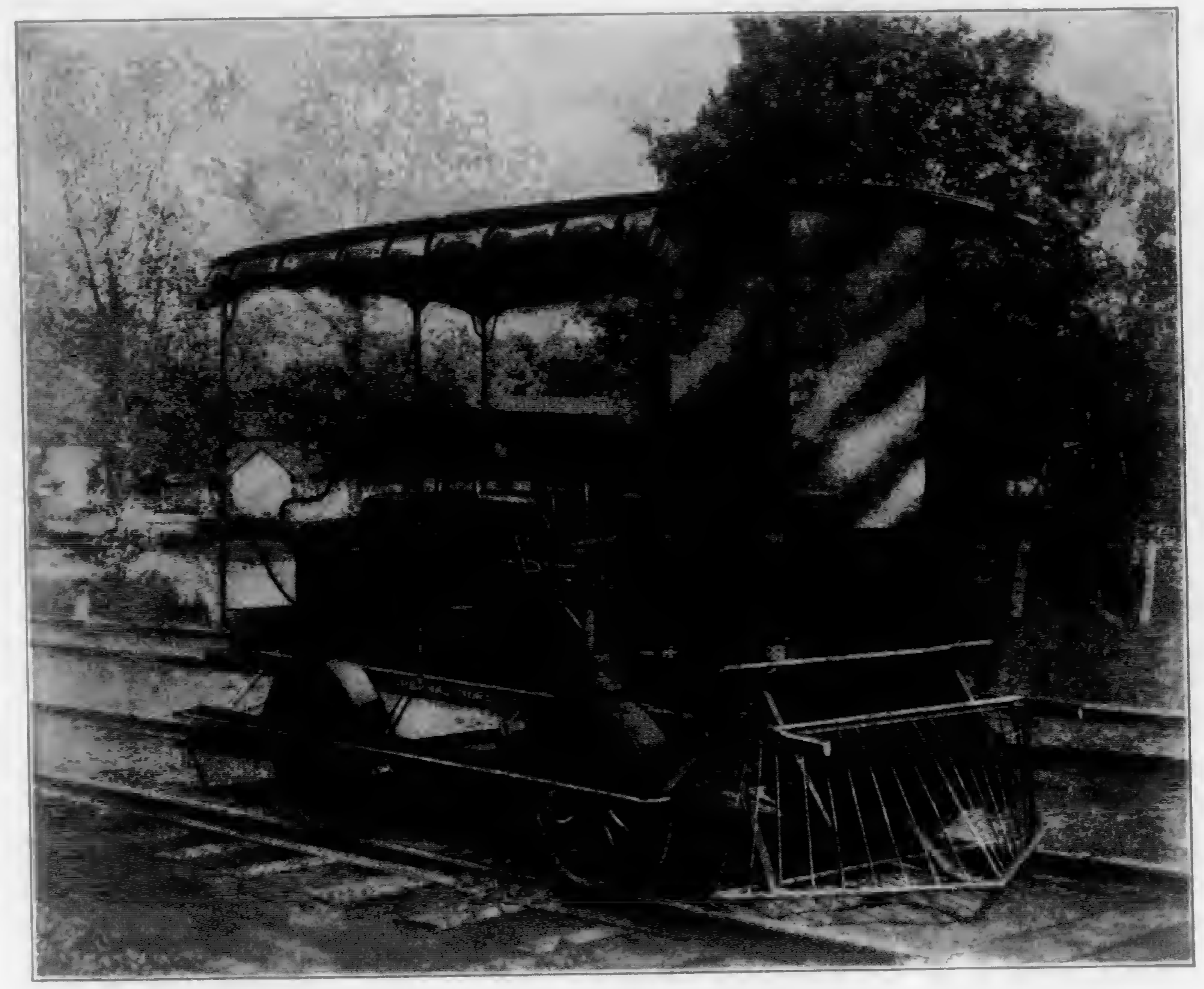
Roberts is a member of the firm of Roberts Bros., contractors, with offices in the Central Bank building, Oakland. Among the contracts taken by this firm since it hung out its shingle in Oakland are the Taft and Pennoyer building and the branch telephone exchange, both of which are under construction.

Recent Orders for Medusa Compound

The Building Material Co., Inc., Monadnock building, San Francisco, reports recent orders for Medusa for the following constructions: Jerome Garage, Polk and Jackson streets; Butler building, Geary and Stockton streets; Woodward Investment Co. building, Turk and Taylor streets; M. J. Brandenstein building, Spear and Mission streets; Corville Estate Company's building, Clay and Drumm streets; Joseph Baer building, Folsom and Fifth streets; Santa Marina Company building, California and Drumm streets; Drexler building, New Montgomery and Minna streets; Oroville Light & Power Co. powerhouse, Oroville, California; Government construction at Point Bonito.

An Index to the Advertisements

New Advertisers Not Noted Here Will Be Classified Next Month



The Fairbanks, Morse Gasoline Motor Car

The Gasoline Motor Car for Railroad Inspection

THE gasoline motor car question, as applied to railroad inspection work, has been receiving considerable attention of late. It is being conceded, by leading railroad officials, as being the most satisfactory method, not only for the inspection work itself, but because of the saving effected, which runs from $45.00 to $60.00 a day.

When Fairbanks, Morse & Co. first brought out the automobile type inspection car, feeling ran high against the machine on account of its weight, the officials claiming that it was not practicable to run a heavy car, except on train orders, which they did not want to do, never taking into consideration that a special car and engine always had to have orders. After persistent effort on the part of the motor car people, a large inspection car was sold to the Michigan Central, and the figures shown on one trip were astonishing.

Record of trip made by George H. Webb, Chief Engineer, M. C. R. R., with No. 16 2-cylinder gasoline motor car:

Total Mileage	TOTAL			No. of Miles Per		
	Gaso. Gal.	Batt. Cells	Lub. Oil Gal.	Gal. Gaso.	Batt. Cell	Gal. Lub. Oil
2327	122.5	24	4½	19	97.	517

Marshall to Allegan, 66.4 miles in 1 hour, 40 min. Rate, 40 miles per hour.

Tekonsha to Harris, 29 miles in 45 minutes.

South Haven to Kalamazoo, 39.6 miles in 45 minutes. Rate, 52.94 miles per hour.

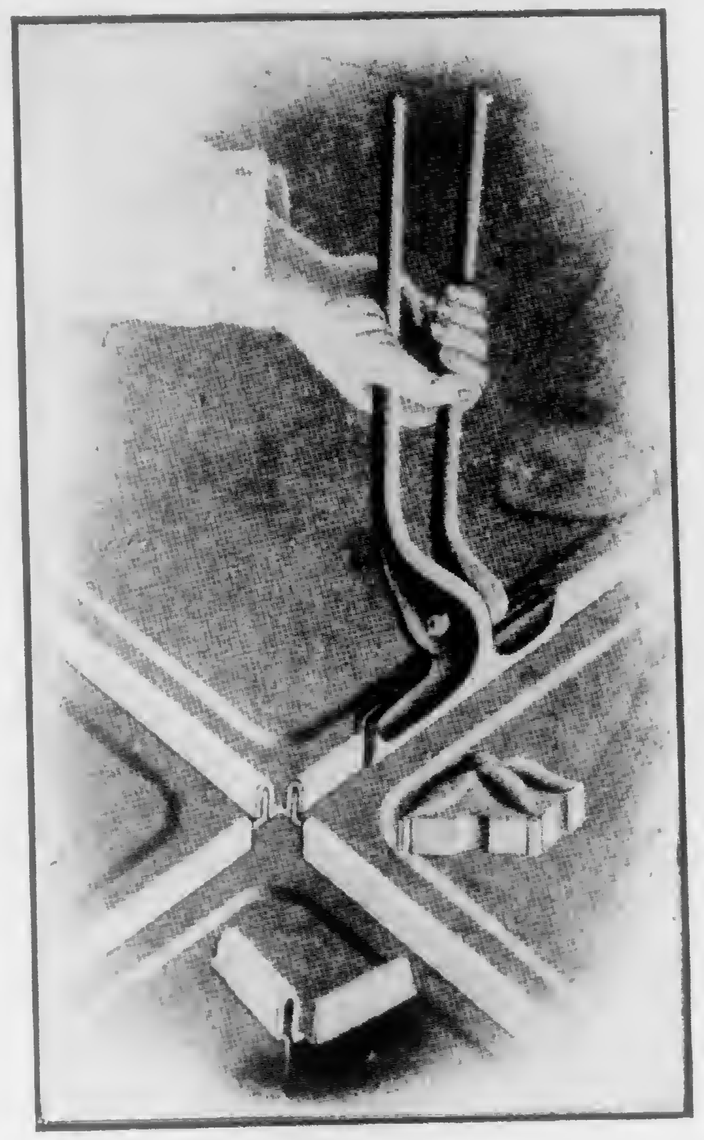
Since the first type machine came out, numerous changes have been made in the construction of the car and the most approved type of up-to-date inspection cars is shown herewith.

The observation end of a special car, on a fast train, is an ideal place to make a lightning inspection, but the inspection that really counts now is done with a gasoline motor car, operated at a speed best adapted to a careful and thorough examination of the roadway.

One small freight wreck would nearly equip a large line with enough motor cars for every Superintendent and Roadmaster. Owing to the large number of wrecks in the West, some of the large roads have furnished motor cars for every Roadmaster and have issued a bulletin that the division must be carefully covered once a week. The motor car has come to stay and is daily becoming a greater factor in the up-to-date and economic handling of large railroad systems.

Bennett-Voorhees

Announcement is made of the marriage on December 4th of Miss Ethel Robinson Bennett and Willard Raymond Voorhees, manager on the Pacific Coast of the Russell and Irwin Manufacturing Company of New Britain, Conn. The marriage took place at the bride's home in Ross, where the couple will reside upon their return from the East. Mr. Voorhees has a host of friends on the Coast who wish him happiness in his career as a benedict.



See that Lock Joint

Metal Ceilings

SAN FRANCISCO architects are specifying metal ceilings more than ever before, a condition which is attributed to several reasons. One is that buildings thus equipped are less likely to be injured in case of a slight earthquake. The plaster ceilings crumble badly from the shock. Then, again, the metal ceiling is fireproof, clean and as turned out today, quite artistic.

The best metal ceilings in San Francisco are handled by C. A. Chaffey of Van Ness avenue, who has been in the business for a number of years and understands it thoroughly. One of the handsomest metal ceilings in the Bay City was installed by Mr. Chaffey recently in the Van Ness Theatre. The Chaffey goods have a lap and also a lock joint construction. The former ceilings are as good as any on the market, the beads true and the seams as tight as a lap joint seam can be. The lock joint ceilings cost a little more, but those who have used both say they can save the difference in the economy of erection.

Handsome Electroliers

Thirty very handsome electroliers have just been turned out for San Jose by the Joshua Hendy Company. The casting is of handsome design and the merchants of the Garden City who subscribed for the lights are well pleased with them. They have been placed at intervals along First and Santa Clara streets and add materially to the attractiveness of these thoroughfares in daylight as well as at night. The Hendy Company intends to make a specialty of electrolier castings, as its big factory in Sunnyvale is splendidly equipped for turning out this line of goods.

Uncertificated Architects in Los Angeles

Members of Los Angeles Chapter, A. I. A., have started a movement looking to enforcement of the State law regarding the practice of architecture.

It is desired that action be taken to prevent uncertificated architects from engaging in construction work in Los Angeles. At a recent meeting of the Chapter, Sumner P. Hunt and John P. Krempel, members of the State Board of Architecture, explained that the present law is operating as successfully as conditions permit, and advised that no radical measures be adopted at this time. Both admitted that there are trespassers on the domain of the architects who possess certificates and are complying with the Institute regulations in force throughout the country, but they foresaw innumerable legal complications if the matter should be forced to an issue.

It was pointed out that there are firms which evade the Institute rules by having in them an architect with a certificate, and another without one.

Architect R. B. Young presented a communication in which he criticised the opposition of Building Inspector Backus to the use of hollow tile blocks for outer walls in certain classes of buildings. The Council recently acted in favor of the Inspector's contention that this material is not a sufficient safeguard against fire. Architect Frank Hudson suggested that a practical demonstration be made in the presence of the Council and underwriters.

Hoyt Bros. in New Offices

Hoyt Bros., the well-known Santa Rosa contractors, are now in their new offices in Santa Rosa and have as complete an equipment for contractors' purposes as any concern north of the Bay. Hoyt Bros. are prepared to take contracts anywhere in the State. Several good size buildings were erected by this firm in San Francisco the past year.